

United States Department of the Interior

FISH AND WILDLIFE SERVICE



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August 9, 1990

Mr. Robert Swale
U. S. Environmental Protection Agency
Office of Superfund
Waste Management Division
230 South Dearborn Street
Chicago, Illinois 60604

Dear Mr. Swale:

Enclosed are the revisions to the Wetlands delineation report for the American Chemical Services site in Griffith, Indiana, performed under IAG-DW14934313-0. An annotated list of revisions follows:

- 1) In response to BTAG coordinator's comments regarding Pg.4, Para. 1: The paragraph explaining the procedures used to draw the preliminary map has been expanded and merged with preceding paragraphs. Hopefully, this will clarify how the soil survey was utilized.
- 2) Disturbed conditions--During the field reconnaissance flagging visit the area was scanned for disturbed conditions. No disturbed areas were observed except for small clearings resulting from other remedial activities occurring at the site. This information has been incorporated into the report and is located on page 4, paragraph 1, last sentence.
- 3) Wetland hydrology--A paragraph has been included explaining how the criterion for wetland hydrology was determined to have been met. This is located on page 4, paragraph 2.
- 4) Soil comparisons to Color Chart--Due to extreme inclement weather and the obvious difference between the hydric and non-hydric soils, the samples were taken back to the office. As was mentioned in a telephone conversation between Robin Nims and you on August 6, 1990, the soil samples were retained. The representative soil samples will be forwarded to you for reference. Many of the samples are still moist after having been stored for 3 months.
- 5) Selection of Sampling Points--The rationale for selecting additional sampling areas to replace areas that did not meet the 3 mandatory technical criteria is elusive. The lack of the 3 criteria indicates that the area is not a wetland. Selecting additional areas would not have influenced the outcome of the survey.

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- 6) Wetland Hydrology--Due to a misinterpretation of the field survey forms, FAC species were calculated into the percent hydrophytic vegetation calculations, while species that did not have an indicator category were omitted. This oversight has been corrected. Species that did not have indicator category listings have been assigned UPL listings as suggested. However, 2 species that are found only in water, that did not have category listings, were not assigned UPL categories and were left with the category of "NONE". These corrections have not affected the outcome of the survey; only 1 additional area was determined to be non-wetland due to lack of a predominance of hydrophytic vegetation. A discussion of this information is located on page 10, paragraph 2, under the heading of Wetland I.
- 7) Table 2--Table 2, located on page 11, has been revised with the recalculation of the percent hydrophytic vegetation. This criterion was calculated using percent OBL and FACW, versus FACU and UPL. The new figures are listed in the table. The wetland determination status of representative area Q, has changed from YES to NO.
- 8) Figure 5--A key has been added to Figure 5. Text has been added explaining how the final boundaries were drawn. Also, it is explained that no additional acreage was delineated. As stated in the introduction of the report there are approximately 50 acres comprising both Wetland I and Wetland II. This information can be found on page 9.

If you have additional questions regarding the report, or the contents of this letter, please contact Robin Nims of my staff at FTS 332-4269.

Sincerely yours,

Herolole

David C. Hudak

Supervisor

Wetlands Delineation at American Chemical Services Hazardous Waste Site, Griffith, Indiana. IAG-DW14934313-0

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May 1990

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Summary

At the request of the U.S. Environmental Protection Agency, Region V, the U.S. Fish and Wildlife Service conducted a wetlands delineation for site wetlands potentially impacted by contaminants originating at the American Chemical Services (ACS) hazardous waste site.

Office review and field surveying indicated numerous wetlands exist at the ACS site, many of which are not identified on the National Wetland Inventory. The diversity of wetland types present provide habitat for a variety of wildlife species.

INTRODUCTION

The American Chemical Services (ACS) Superfund site is located in Griffith, Indiana on the outskirts of the city's southeast side. The site was placed on the National Priorities List in 1983 as a result of investigations into chemical disposal practices on the site. ACS operates as a chemical/solvent recovery facility, which also has a limited chemical manufacturing operation. During the course of its operations, ACS dumped and otherwise disposed of unrecoverable solvents on the property, in addition to transporting waste to the adjacent Griffith City Landfill. Kapica Drum, Inc. also allegedly disposed of drum-cleaning residues on ACS property. These 3 sites total 52 acres and jointly comprise the official ACS site.

The National Wetland Inventory (Figure 1) indicates numerous and extensive wetlands within a 1-mile radius of the ACS site to the southwest, south, southeast, east, and northeast. There is an extensive wetland complex adjacent to the northwest boundary of the site. These wetlands are dissected and bordered by the Grand Trunk Western Railroad lines, the Chesapeake and Ohio Railroad lines, and the abandoned Erie-Lackawanna Railroad lines. The wetlands to the north of the Grand Trunk Western lines were not within the project boundary limits, however, they are likely hydraulically connected. The NWI map classifies this wetland complex as palustrine, emergent, semi-permanent/palustrine emergent, seasonally flooded. The entire complex is approximately 78 acres, however, only 50.5 acres were included in the present delineation.

OBJECTIVES

The objectives of this project were:

- 1. To ground-truth and verify wetlands delineated on the National Wetland Inventory maps.
- 2. To identify other wetland areas not included in the National Wetland Inventory.
- 3. To identify dominant vegetation in the various wetland areas.
- 4. To assess relative value of the various wetland habitats for fish and wildlife resources.

METHODS

The methods utilized in this delineation are outlined in the Federal Manual for Identifying and Delineating Jurisdictional Wetlands (1989). Because of the relative homogeneity of the site, the soils assessment procedure was selected. Prior to the field work, an office review was conducted to preliminarily outline the area in question. Due to the unavailability of the most recent aerial photographs the preliminary boundaries were outlined from a 1984 photograph, obtained from the EPA project manager. Based upon the field inspection, the 1984 photograph was accurate with the exception of approximately 5 additional acres lost to the Griffith Landfill operation.

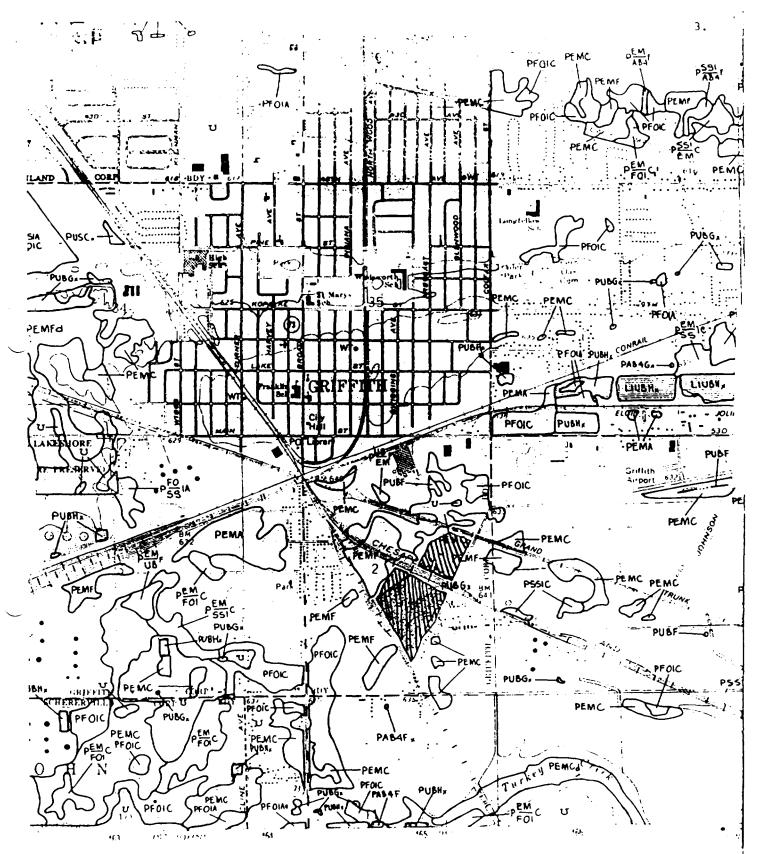


FIGURE 1. National Wetland Inventory map in the vicinity of the American Chemical Service site, Griffith, Indiana. USGS Highland Quadrangle. Cross-hatched area is ACS.

During the office review and map preparation a copy of the U.S. Soil Conservation Service Soil Survey for Lake County, Indiana (1972) was consulted to determine the presence or absence, and locations of hydric soils. The Lake County Indiana Survey sheet number 21 (Figure 2) indicates the majority of the area in question consists of Maumee loamy fine sand, interspersed with areas of Plainfield fine sand, Watseka loamy fine sand, and a small section of Tawas muck. The Maumee loamy fine sand and Tawas muck are classified by the U.S. Department of Agriculture and the Soil Conservation Service (1986) as hydric soils. The soil survey was used to compare soil types to the general configuration of the visual boundary of the wetlands on the aerial photograph. To avoid damaging the aerial photograph, a clear plastic overlay was attached and the information transcribed. Points along the visual perimeter of the wetland that coincided with the hydric soils boundaries were randomly selected and their compass bearings recorded to assist in field location. Location of the points were arbitrarily located from 88 to 282 feet apart based upon a scale of 1 inch (in) - 25 millimeters (mm) - 220 feet (ft), 1 mm - 8.8 ft. The preliminary map generated in the office (Figure 3) was used in the field reconnaissance flagging effort. In the field, point A was located on ground by its position relative to the railroad track embankment and the tree row in the upper northwest corner of the study area. Based upon the preliminary map, point B was located with the use of a Suunto MC-1 mirror compass and was measured off with a tape measure 220 feet S 66 E of point A. All other points were located and measured off in the same manner. Orange flags were placed at each point, and pink flags were placed every 55 feet to assist in maintaining the proper bearing alignment. During the flagging reconnaisance visit, no sign of disturbed conditions existed in the wetland areas with the exception of the railroad embankments that were placed through the wetlands, and minor disturbances such as small clearings for groundwater wells etc., resulting from other remedial investigation activities occuring at the site. An apparent illegal fill had occured in the wetland located adjacent to the Griffith City Landfill.

During the reconnaisance flagging visit it was noted that the entire wetland area identified on the National Wetland Inventory either possessed standing water (up to 2.5 feet in some areas; 5 feet in the ditches), or water-logged saturated soils (water table at soil surface). Based upon these field observations it was determined that the hydrologic criteria for wetlands was met.

To aid in the identification of the different soil types in the field, the soil profiles for Maumee loamy fine sand and Plainfield fine sand were recorded (Table 1). Because the soil sample probes were taken to a depth of 18 inches, only the first 3 incremented intervals were noted. Soil samples were collected at each point with a 21 inch Hoffer Soil Sampler probe. Due to extreme inclement weather, and the strikingly obvious difference between the hydric and non-hydric soils, the soil samples were observed in the field and the lowest 3 inches were collected in whirl-pak bags for later comparisons to the Munsell Soil Color charts. Areas possessing standing water did not yield soil samples due to wash-out upon extraction of the probe. In these instances the whirl-pak bag containing the point location tags were transported back to the office empty.

Representative observation areas (Figure 4) were selected based upon several factors. In addition to selecting areas that met the hydric soil criterion, representative observation areas that had apparent characteristics, but were not identified on the National Wetland Inventory map were also chosen. The plant communities were characterized, and the percent areal cover of the dominant species

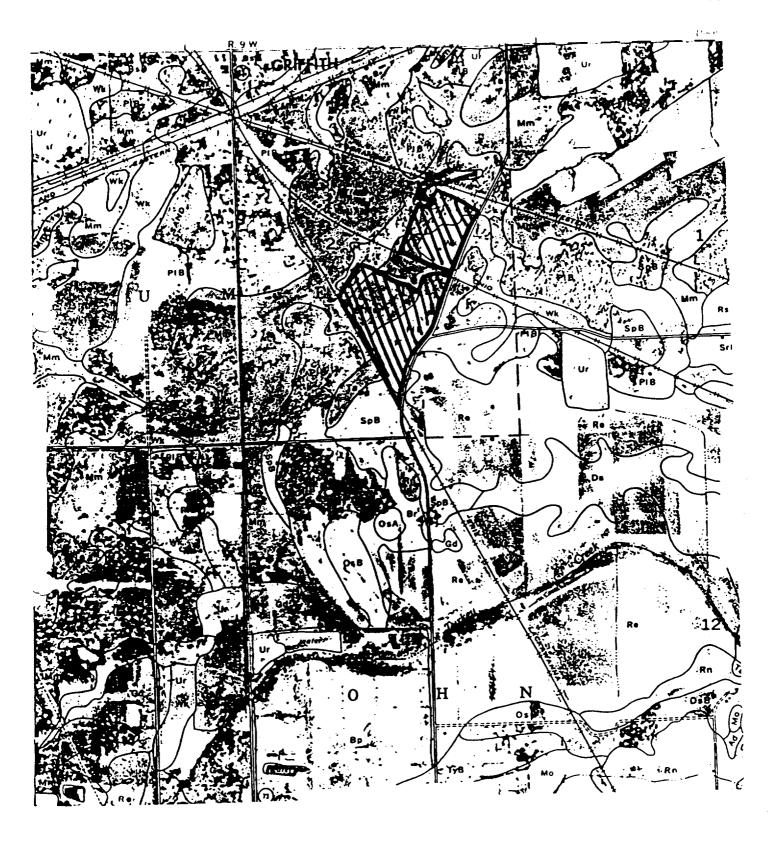


FIGURE 2. U.S. Soil Conservation Survey-Lake County. Plate number 21. Cross-hatched area is ACS. Shaded areas are hydric soils.

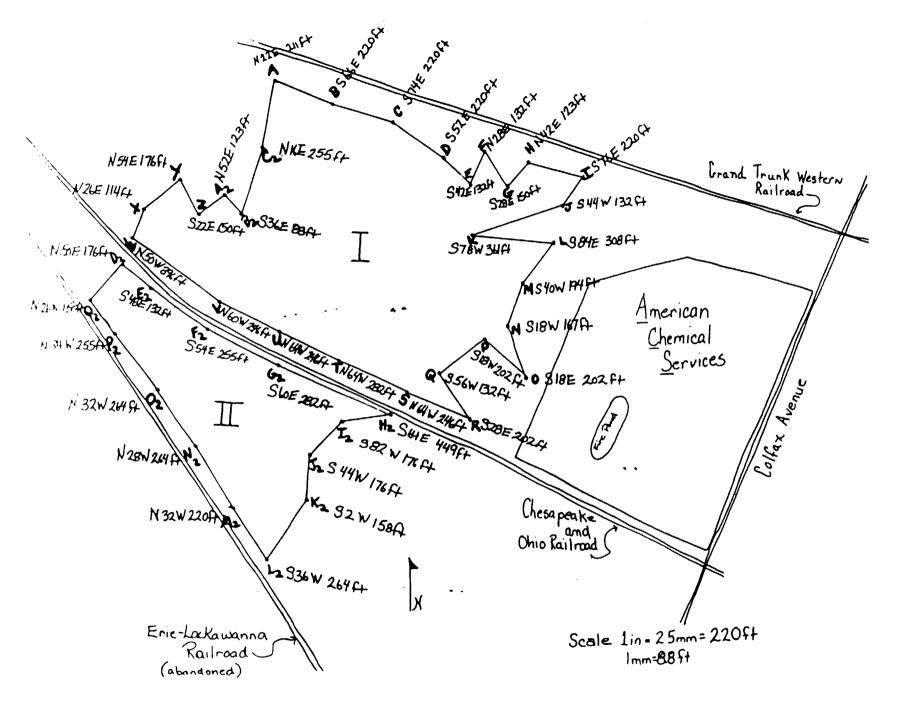


Figure 3. Preliminary wetland boundaries transcribed from 1984 aerial photograph. (Reduced 64%)

Table 1. Typical, Profiles for Maumee loamy fine sand (Hydric) and Plainfield fine sand (Non-hydric) in Lake County, Indiana.

| Maume | e loamy fi | ine sand | | Plainfield fine sand | | | | | | | |
|-------|------------|----------|---------------------|----------------------|-----------------|---------------------|--|--|--|--|--|
| Depth | | Color | Munsell Notation | Depth | Color | Munsell Notation | | | | | |
| - 9 | inches | Black | N 2/0 | 0-4 inches | Dark Grey | 10 YR. 3/1 | | | | | |
| -16 | inches | Black | N 2/0 | 4-6 inches | Greyish brown | 10 YR. 4/2 | | | | | |
| | inches | Black | N 2/0 | 6-27 inches | Yellowish brown | 10 YR. 5/4 | | | | | |

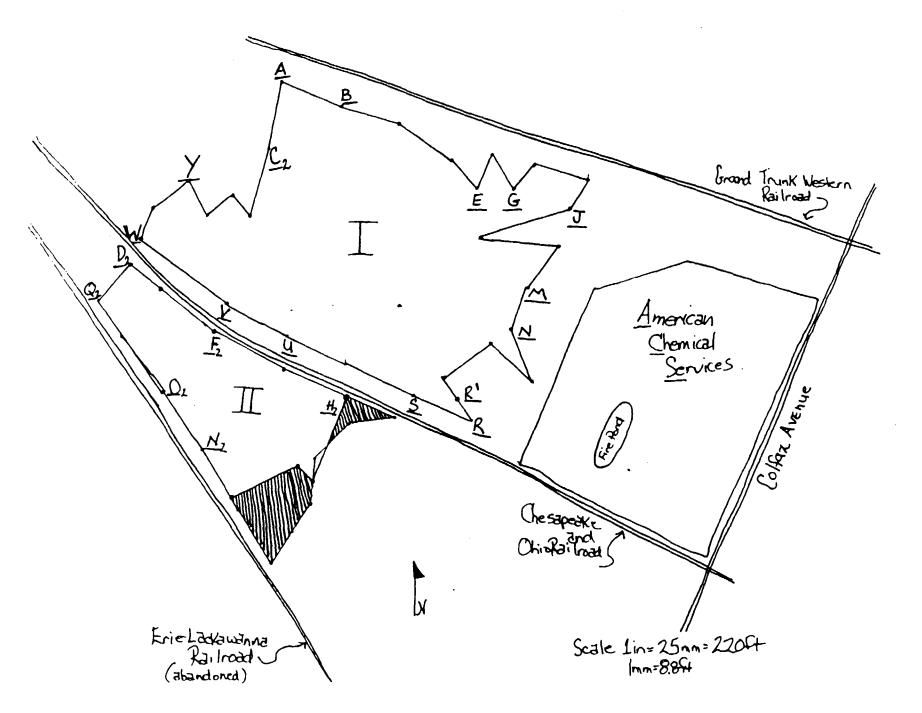


Fig. 4. Representative observation areas for vegetation sampling. Cross-hatched area lost to landfill expansion $^{\circ}$

in the communities were visually estimated. Samples of the dominant vegetation at each of the representative areas were collected in 8 gallon plastic bags and transported to the office for later identification. A list of references used is included in Appendix 1. Once the vegetation was identified the information was recorded on field data forms and the indicator status of the species was obtained from the National List of Plant Species that occur in Wetlands; Indiana (1988). A wetland determination was then made for each representative observation area based upon the 3 mandatory technical criteria; hydrophytic vegetation, hydric soils, and wetland hydrology, as outlined in the Federal Manual for Identifying and Delineating Jurisdictional Wetlands. The information obtained in the survey was used to prepare the final map of the site wetlands. It is important to note that no "additional" wetlands have been delineated in terms of acreage. This study has examined wetlands currently shown on the National Wetland Inventory map, and differentiated between the existing habitat types that are not delineated on the NWI within the original boundaries. The wetland boundaries indicated on Figures 5 and 6 were drawn based upon visual field observations of shifts in dominant vegetation. All soils within the peripheral boundaries are hydric.

RESULTS AND DISCUSSION

Of the 21 representative observation areas sampled, 12 met all 3 mandatory technical criteria for wetland determination (Table 2). Of the 9 areas that failed the mandatory technical criteria test, M, N, S, D₂, and H₂ lacked all 3 criteria; C_2 and C_2 lacked hydrophytic vegetation criteria; C_3 lacked hydrophytic soil and hydrology criteria, and C_3 lacked wetland hydrology and hydrophytic vegetation criterion.

Wetland I

Wetland I is bounded by the Grand Trunk Western Railroad, the American Chemical Services site, and the Chesapeake and Ohio Railroad. Based upon the results of the survey this area is more complex than the National Wetland Inventory (NWI) indicates (Figure 5). NWI shows this area as consisting of a large palustrine, emergent, semi-permanent mixed with seasonally flooded wetland. The NWI does not show any of the forested or scrub-shrub wetlands bordering the palustrine emergent area. Of the 15 representative observation areas selected for Wetland I, the 5 that did not meet the technical criteria for wetland determination were all transitional zones between the wetland-upland interface. Non-hydric soils were present at 4 of the 5 areas. All of the areas possessed hydrophytic vegetation, but the percentage of FACU and UPL exceeded the percentage of FACW and OBL species at each of the 5 areas except R^1 . It should be noted that some species were collected at the various areas that did not have indicator category designations; these species were not located in either the state or national list of plant species found in wetlands. It is sophistic to automatically list species not included on the National Plant List as UPL species, however, based upon reviewers suggestions this has been done with the exception of 2 species of liverworts: Riccia fluitans and Ricciocarpus natans. These two species are bryophytes which are found in the water; it would be completely erroneous to list these as UPL species.

Wetland II

Wetland II is bounded by the Chesapeake and Ohio Railroad, the City of Griffith landfill, and the abandoned Erie-Lackawanna Railroad bed. Wetland II, according to the NWI is a palustrine, emergent, semi-permanent wetland. The various other habitat types surrounding it have been omitted from the official map.

This wetland area has been impacted due to past and present expansion of the City of Griffith Landfill. Approximately 5 acres of emergent/scrub-shrub/forested wetland on the north and southeast corners have been filled since the 1984 aerial photograph was taken. There is also a gravel road/turn-around that appeared to have been recently laid in the center of the palustrine, emergent, seasonally flooded wetland (Figure 5). This was probably an illegal fill; the U.S. Army Corps of Engineers has been notified.

There were 4 representative observation areas that did not meet the 3 technical criteria for wetland designation. However, 3 areas were placed along the railroad embankment, due to the location of a drainage ditch (approximately 5 feet deep) lying between the railroad tracks and the wetland area to the south of the ditch. Additional representative areas were not selected to replace areas not meeting the 3 mandatory criteria, any additional points along the railroad embankment would yield

Table 2. Results of the technical criteria test for 21 representative observation areas at the ACS site, Griffith, Indiana.

| Area | Soil Series | Hydrophytic Vegetat | Hydric | Soil | Wetland | Hydrology | Wetland | Determination |
|----------------|------------------------|---------------------|--------|------------|---------|-----------|---------|---------------|
| | | % OBL. FACW | Yes | No | Yes | No | Yes | No |
| Α | Maumee loamy fine sand | 71.0 | x | | X | • | X | |
| В | Maumee loamy fine sand | 100.0 | X | | X | | X | |
| E | Maumee loamy fine sand | 66.7 | X | | X | | x | |
| G | Maumee loamy fine sand | 88.0 | X | | X | | X | • |
| J | Maumee loamy fine sand | 100.0 | X | | X | | Х | |
| М | Plainfield fine sand | 25.0 | | X | | X | | X |
| N. | Plainfield fine sand | 20.0 | | X | | X | | X |
| R^1 | Plainfield fine sand | 50.0 | | Х | | X | | X . |
| R | Maumee loamy fine sand | 66.0 | X | | X | | X | |
| S | Plainfield fine sand | 45.0 | | . X | | X | | X |
| U | Maumee loamy fine sand | 100.0 | X | | X | | X | |
| V | Maumee loamy fine sand | 100.0 | X | | X | | X | |
| W | Maumee loamy fine sand | 75.0 | X | | X | | X | |
| Y | Maumee loamy fine sand | 60.0 | X | | X | | X | |
| C_2 | Maumee loamy fine sand | 16.0 | X | | X | • | | X |
| D_2^2 | Plainfield fine sand | 14.0 | | X | | X | | X |
| F_2 | Maumee loamy fine sand | 40.0 | X | | | X | | X |
| H ₂ | Plainfield fine sand | 25.0 | | X | | X | | X |
| N ₂ | Maumee loamy fine sand | 100.0 | X | | X | | X | |
| 02. | Maumee loamy fine sand | 100.0 | X | | X | | X | ٠. |
| Q_2 | Maumee loamy fine sand | 25.0 | X | | X | | | X |

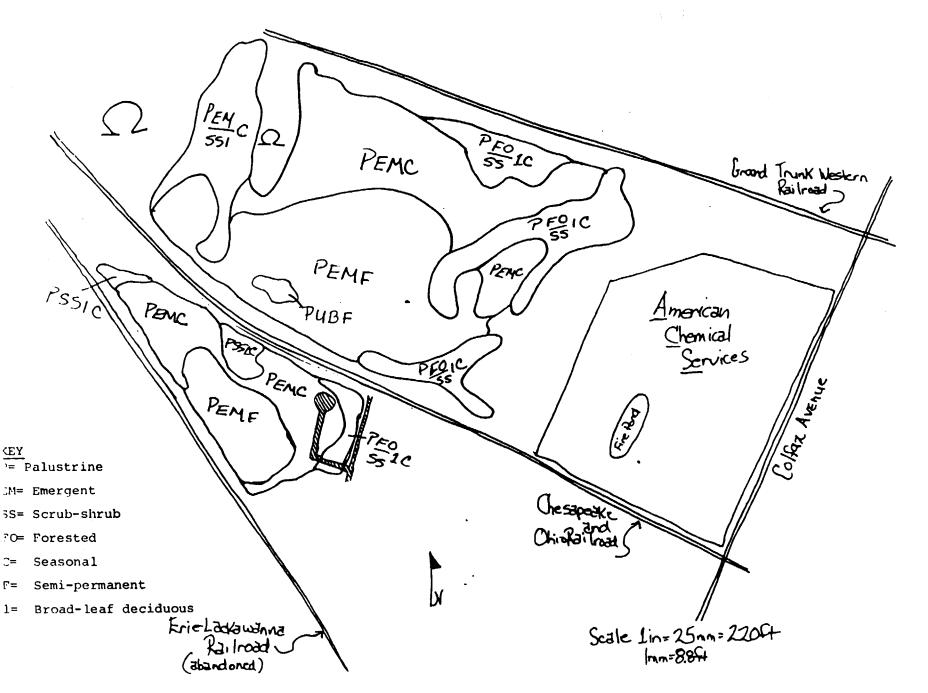


FIGURE 5. Wetland designations at the ACS site, Griffith, Indiana. Cross-hatched area is location of the illegal service road/turn-around fill.

the same results. Technically, the entire area would be classified wetlands if the railroad tracks and embankments did not exist. The 4th area lacked a predominance of hydrophytic vegetation.

NATURAL RESOURCES

This field investigation indicated that the natural resources and natural resource values of the wetland habitats are greater than originally suspected because of the diversity of habitat types present: emergent, scrub-shrub, and forested.

The vegetation of "marshes" is characterized by emergent aquatic plants growing in permanent to semi-permanent shallow water. Also present are species of shallow open water communities, as well as those found in sedge meadows and seasonally flooded basins. Marshes are among the most productive of all wetlands for waterbirds and furbearers, and can also provide spawning and nursery habitat for many species of fish. Birds that use marshes for breeding and feeding include ducks, geese, rails, herons, egrets, terns, and many songbirds. Raptors such as the osprey, bald eagle, and northern harrier frequent marshes in search of prey. Important furbearers inhabiting marshes include beaver, muskrat, and mink. Excellent winter habitat can be provided for upland wildlife, including ring-necked pheasant and eastern cottontail (Eggers and Reed 1987).

The emergent wetlands in the centers of wetland areas I and II are predominated by cattails. A list of species collected can be found in Table 3. Cattail stands provide important food and cover for wildlife. For example, the rhizomes are eaten by geese and muskrats. Muskrats also use the foliage to construct their lodges, which in turn can provide resting and nesting sites for waterbirds. Yellow-headed blackbirds, red-winged blackbirds, and marsh wrens build their nests in cattail vegetation. Wetland area I contains an open water area with a muskrat den and much activity in this area was apparent.

The transitional zones between the emergent areas and shrubby or forest areas support hydrophytic vegetation on saturated but not inundated soils. Plants occurring in these areas include species found in other communities, such as the annuals of seasonally flooded basins, emergent aquatics of marshes, and invading shrubs or trees, which are present as scattered, small individuals.

The transitional emergent zones are particularly important for their water quality functions. Wildlife habitat is provided for many species including sandhill crane, ring-necked pheasant, common snipe, sedge wren, small mammals, and white-tailed deer. The composites found in these areas are an important fall and winter food source for songbirds.

Scrub-shrub wetlands are plant communities dominated by woody vegetation less than 20 feet in height and with dbh's of less than 6 inches growing on saturated to seasonally flooded soils. They can be dominated by willows and/or red-osier, and sometimes silky (swamp) dogwood. These areas usually retain some of the forbs, grasses, and sedges of the transitional emergent zones. The vegetation in scrub-shrub wetlands possesses a variety of wildlife value. Willows are browsed by white-tail deer and eastern cottontails; red-osier dogwoods provide berries for song birds and ruffed grouse and are browsed by deer and rabbits; and elderberry also provides berries for songbirds and ruffed grouse.

Forested wetlands are dominated by mature conifers or lowland hardwood trees. They

Table 3. List of Vegetation Species collected on April 10-11, 1990 at the ACS site, Griffith, Indiana.

| Scientific Name | Common Name | Indicator Category* |
|------------------------------|---------------------|---------------------|
| Agrimonia parviflora | Agrimony | FAC+ |
| A. pubescens | Agrimony | UPL |
| Ampelopsis arborea | Peppervine | FACW |
| Apocyneum androsaemifolium | Spreading dogbane | UPL |
| Aronia arbutifolia | Red chokeberry | FACW |
| <u>Betula allegheniensis</u> | Yellow birch | FAC |
| altha palustris | Marsh marigold | OBL. |
| ltis occidentalis | Hackberry | FAC- |
| Cornus ammonum | Swamp dogwood | FACW+ |
| C. stolonifera | Red-osier dogwood | FACW |
| Corylus americana | Hazelnut | FACU |
| Cytisus scoparius | Scotch broom | UPL |
| Dipsacus sylvestris | Teasel | FAC |
| Fragaria virginiana | Common Strawberry | FAC- |
| Galium aparine | Bedstraw | FACU |
| Hamamelis virgiana | Witch hazel | FACU |
| Liquidambar styraciflua | Sweet Gum | FACW |
| Ludwigia glandulosa | Ludwigia | OBL |
| Lyriodendron tulipifera | Tuliptree | FACU+ |
| Nyssa sylvatica | Tupelo | FACW+ |
| Onoclea sensibilis | Sensitive fern | FACW |
| Populus deltoides | Cottonwood | FAC+ |
| P. grandidentata | Large-tooth Poplar | FACU |
| tremoides | Quaking Aspen | FAC |
| runus pennsylvanica | Pin cherry | FACU |
| Pteris esculenta | Braken fern | FACU |
| Quercus alba | White oak | FACU |
| Q. bicolor | Swamp white oak | FACW+ |
| Q. coccinea | Scarlet oak | UPL |
| O. palustris | Pin oak | FACW |
| Q. rubra | Northern red oak | FACU |
| O. velutina | Black oak | UPL |
| Rhus copellina | Dwarf sumac | UPL |
| Riccia fluitans | Liverwort | NONE |
| Ricciocarpus natans | Liverwort | NONE |
| Rosa carolina | Wild rose | FACU- |
| R. multiflora | Multi-flora rose | FACU |
| R. nitida | Northeastern rose | UPL |
| Rubus allegheniensis | Highbush blackberry | FACU+ |
| R. canadensis | Smooth blackberry | UPL |
| R. hispidus | Swamp dewberry | FACW |
| R. villosa | Low blackberry | UPL |
| Salix discolor | Pussy willow | FACW |
| S. exigua | Sandbar willow | OBL |

Table 3. List of Vegetation Species (Con't).

| Scientific Name | Common Name | Indicator Category |
|----------------------------|---------------------|--------------------|
| Sambucus canadensis | Elderberry | FACW- |
| Solidago altissima | Golden rod | FACU |
| Sonchus arvensis | Field sow-thistle | FAC- |
| Spiraea alba | Meadow sweet | FACW+ |
| S. latifolia | Meadow sweet | FACW- |
| Stenanthium gramineum | Featherbells | FAC |
| Thelypteris thelypteroides | Marsh fern | FACW |
| Typha angustifolia | Narrow-leaf cattail | OBL |
| <u>latifolia</u> | Broad-leaf cattail | OBL |
| 'lmus rubra | Slippery elm | FAC |
| Verbascum thaspus | Wooly mullein | UPL |
| Verbena urticifolia | White vervain | FAC+ |
| Viburnum prunifolium | Black haw | FACU |
| Vitis aestivalis | Summer grape | FACU |
| V. vulpina | Frost grape | FACW- |
| Xanthorhiza simplissima | Yellowroot | UPL |

^{*}Species with bold UPL indicator status are not listed in the state or national plant lists and have been assigned this status by default.

are important for stormwater and flood retention, and also provide habitat for white-tailed deer, furbearers, songbirds, ruffed grouse, barred owl, and amphibians. The various wetland habitats at the American Chemical Services site are being used by a variety of wildlife species, many of which were observed during the reconnaissance flagging visit, and the field survey visit (Table 4).

ADDITIONAL WETLANDS

At a meeting held by the U.S. EPA project manager on February 28, 1990, FWS was requested to observe the area immediately east of American Chemical Services, adjacent to Colfax Road to determine if wetlands were present. This area was walked during the field reconnaissance flagging visit, which revealed various wetlands, some of which were not indicated on the NWI maps (Figure 6). There is a palustrine, emergent, semi-permanent wetland approximately 7 acres in size about 0.1 mile east of Colfax Road, that is identified on the NWI map. The field check revealed that this wetland extends west and southward within 20-30 feet of the roadway. These wetlands would be classified as a combination palustrine, emergent/scrub-shrub forested area with water regimes ranging between temporary, saturated, seasonal, seasonal saturated, and semi-permanent.

A wetland delineation was not conducted for this area, however, the soil survey maps indicate that portions do contain hydric soils.

ENDANGERED SPECIES

The Highland area of Lake County is represented by many federal and state species of special emphasis/concern, in addition to several federal threatened and endangered species. An annotated list follows:

Fed E Fed E Fed T Sp EM/CN

Peregrine falcon
Pitchers thistle
Great blue heron
American bittern
Black tern
Least bittern
King rail
Yellow-crowned night heron
Spotted turtle
Western smooth green snake

Franklin's ground squirrel Blanding's turtle Bald eagle

Indiana bat

Myotis sodalis

(Falco peregrinus) *Migratory

(<u>Cirsium pitcheri</u>) (<u>Ardea herodias</u>)

(Botaurus lentiginosus)

(Chlidonis niger) (Ixobrychus exilis) (Ralus elegans)

(Nycticorax violaceous)

(Clemmys guttata)
(Opheodrys vernalis)
(Spermophilus franklini)
(Emydoidea blandingi)

(Haliaeetus leucocephalus) *Historical

This endangered species list constitutes informal consultation only, and is not intended to fulfill the requirement of Section 7 of the Endangered Species Act of 1973, as amended. If, after review of the Phase I Remedial Investigation report, it appears likely that any endangered species may have been/may be affected by this site, it may be necessary to initiate formal consultation. If as a result of further consultation, a "no effect" determination is made regarding endangered species, that determination should be revisited after 1 year for new information, or newly listed species.

Table 4. List of wildlife species observed utilizing the wetland habitats at the American Chemical Services site, Griffith, Indiana April 10-11, 1990.

| Scientific Name | Common Name |
|-----------------------------------|-------------------------------|
| BIR | DS |
| Agelaius phoeniceus | Red-winged blackbirds (many) |
| Aix sponsa | Wood ducks (1 pair) |
| Anas platyrhynchos | Mallard ducks (2 pairs) |
| Branta canadensis | Canada geese (l pair) |
| Charadrius vociferus | Killdeer (1) |
| Corvus brachyrhynchos | Common crows (many) |
| Dendrocopos pubescens | Downy woodpeckers (2) |
| <u>D. villosa</u> | Hairy woodpeckers (1) |
| Larus spp. | Gulls (many) |
| <u>Phasianus</u> <u>colchicus</u> | Ring-necked pheasant (1 male) |
| Regulus satrapa | Golden-crown kinglets (2) |
| Richmondena cardinalis | Cardinals (3) |
| <u>Spinus tristis</u> | American goldfinches (1 pair) |
| MAMM | ALS |
| Procyon lotor | Raccoon (tracks) |
| Odocoileus virginianus | White-tailed deer (tracks) |
| Ondatra zibethicus | Muskrats (3) & den |
| Sylvilagus floridanus | Eastern cottontails (4) |

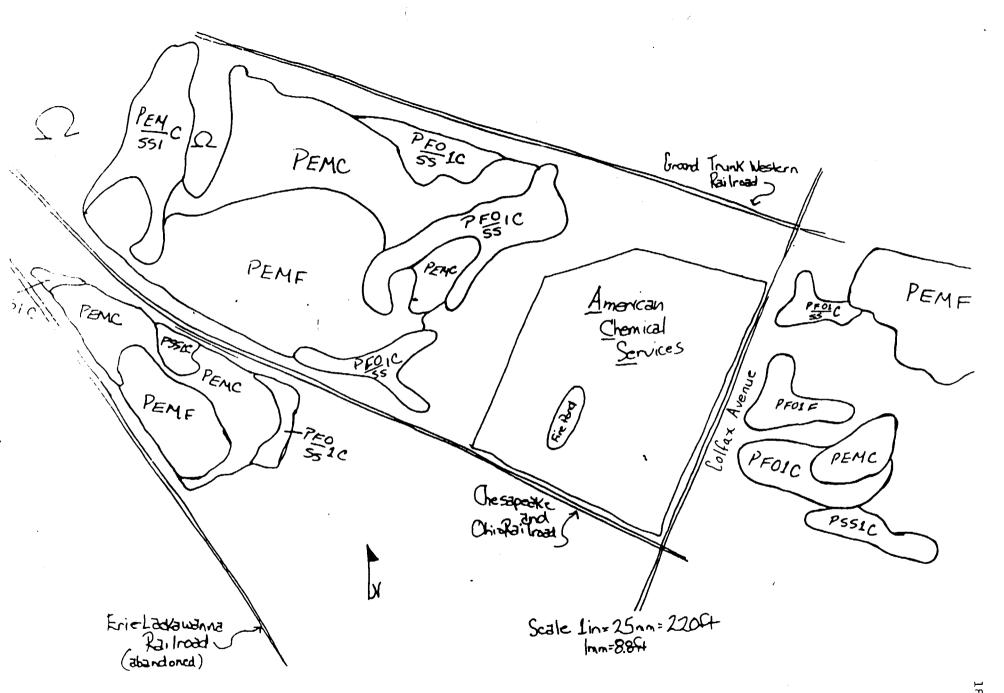


FIGURE 6. Approximate locations and classifications of additional wetlands located near the ACS site, east across Colfax Avenue, Griffith, Indiana.

CONCLUSIONS

- 1. Wetlands identified on the NWI do exist at the American Chemical Services site.
- 2. There are wetlands present at the site that are not identified on the NWI. These wetlands consist of palustrine, forested, and scrub-shrub transitional zones between the NWI-identified emergent wetland and upland areas.
- 3. The wetlands present at the site provide habitat diversity for a variety of wildlife species.
- 4. The wetlands present on the site possess potential habitat for federal threatened and endangered species, state and federal species of special concern/emphasis, and other birds protected by the Migratory Bird Treaty Act.

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APPENDIX 1

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APPENDIX 2
Field Data Forms

DATA FORM ROUTINE ONSITE DETERMINATION METHOD¹

| | Field Investigatog(s): R.NIMS / N. FILLIDICY Date: ARTIEL 1990 Project/Site: ACS County LAKE |
|---------------------------------------|--|
| | Applicant/Owner: EPA Plant Community #/Name: |
| | Note: If a more detailed site description is necessary, use the back of data form or a field notebook. |
| | Do normal environmental conditions exist at the plant community? Yes No (If no, explain on back) Has the vegetation, soils, and/or hydrology been significantly disturbed? Yes No (If yes, explain on back) |
| | VEGETATION Indicator |
| | Dominant Plant Species Status Stratum Dominant Plant Species Status Stra |
| ete 🛈 | 1 Quercus Alba FACU 11 |
| Walk State | 2 Greene Volution None. 12 |
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| er are only | 9 Fare string partitions FECT 19. |
| | 001 51011 11 510 07 5 90 |
| | Percent of dominant species that are OBL, FACW, and/or FAC |
| | Is the hydrophytic vegetation criterion met? Yes No |
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| 1 | SOILS |
| es | Series/phase: 11/10 Subgroup: Typic Subgroup: Typic Subgroup: Subgroup |
| | HYDROLOGY |
| | Is the ground surface inundated? Yes No Surface water depth: |
| | is the soil saturated? Yes V. No. |
| | Depth to free-standing water in ph/soil probe hole: |
| • | List other field evidence of surface inundation or soil saturation. |
| 165 | Is the wetland hydrology criterion met? Yes v No No No |
| | JURISDICTIONAL DETERMINATION AND RATIONALE |
| | |
| | Is the plant community a wetland? "Yes No |
| | This data form can be used for the Hydrac Soil Assessment Procedure and the Plant Community Assessment Procedure. |
| | ² Classification according to Tso-liTrixonomy. ⁷ |
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DATA FORM ROUTINE ONSITE DETERMINATION METHOD¹

| • | Do normal environmental conditions and the vegetation, soils, and/or Yes No (If yes, exp | olain on back) hydrology bee | | · | | | - |
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| | 3. 8. 1. 1. Varpina | | | 12 | | | |
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| | 7. | | | 17. | | | |
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| , , | | N NO ORL EA | CW. and/e | FAC 100 | 90 | | |
| · S | Percent of dominant species the list the hydrophytic vegetation cri | iterion met? | Yes | No | | | |
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| es | Series/phase: Series/phase: Is the soil on the hydric soils list Is the soil a Histosol? Yes Is the soil: Mottled? Yes Matrix Color: Other hydric soil indicators: Is the hydric soil criterion met? Rationale: | Plack Yes Yes Yes Yes Yes | SO No Histia epip Gleyed? Mottle No HYDRO | Subgroup: Undetermine bedon present? You No Colors: | z Typic es No | # w' | |
| es | Series/phase: Series/phase: Is the soil on the hydric soils list Is the soil a Histosol? Yes Is the soil: Mottled? Yes Matrix Color: N 240 Other hydric soil indicators: Is the hydric soil criterion met? | Yes V | No HYDRO | Subgroup: Undetermine bedon present? Your Subgroup: OLOGY Surface water | 2 Typic ed No i | 10 mcs | |
| es 25 | Series/phase: Is the soil on the hydric soils list lis the soil a Histosol? Yes lis the soil: Mottled? Yes Matrix Color: Is the hydric soil indicators: Is the hydric soil criterion met? Rationale: Is the ground surface inundated lis the soil saturated? Yes Depth to free-standing water in particular and surface in particula | Yes Yes No | No Histia epip Gleyed? No Mottle No HYDRO No N | Subgroup: Undetermine Dedon present? Your Surface water DLOGY Surface water | 2 Typic ed No i | 10 mcs | |
| es | Rationale: Series/phase: Maumee Is the soil on the hydric soils list Is the soil a Histosol? Yes Is the soil: Mottled? Yes Matrix Color: N 210 Other hydric soil indicators: Is the hydric soil criterion met? Rationale: wheels characteristic the soil saturated? Yes Depth to free-standing water in this other field evidence of surface Is the wetland hydrology criterion Rationale: | Yes V No V Rlack Yes V Yes V No Distribution in met? Yes | No N | Subgroup: Undetermine bedon present? You have bedon present. | z Typic ed No | 10 mcs | |

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| Applicant/Owner Note: If a more detailed site description. Note: If a more detailed site description. Do normal environmental conditions exist at the plant community? On normal environmental conditions exist at the plant community? If no, explain on back) Has the vegetation, soils, and/or hydrology been significantly disturbed? (If yes, explain on back) | |
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| Series/phase: Maurer luamy file No Und Series/phase: Yes No Histic epipedon pre | sent? Yes No |
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| nd surface inuriodical No — | |
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| Is the plant descriptional description | o Procedure and the Plant October |
| Is the plant community a wetland? Yes Rationale for jurisdictional decision: This data form can be used for the Hydric Soil Assessment Assessment Procedure. | n • |
| I This data form can be used to! | |
| Assessment Procedure Assessment Procedure Classification according to Soil Taxonomy 2 Classification | |
| 2 Classification accurring | |
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DATA FORM ROUTINE ONSITE DETERMINATION METHOD¹

| Field Investigator(s): K. Nim. | S | | | Date: | | |
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| Project/Site: ACS | | | State: _ IN | . County: _ | AKE | |
| | | Plan | nt Community #/Nai | ne: _ D | | •• |
| Note: if a more detailed site descrip | otion is nec | essary, us | e the back of data | form or a field | notebook. | |
| Yes No (If no, explain Has the vegetation, soils, and/or hyd | i on back) drology b ec | • | • | - 1 2 1. | | |
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| Dominant Plant Species | Status | Stratum | Dominant Plant S | pecies | S:alus | Stratur |
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| 4. sedge spo | <u></u> | | 14 | | | |
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| Depth to free-standing water in oids | oil proba h | nie. | | | | |
| List other field evidence of surface in | nundation of | or soil satu | uration. | | | |
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| Rationale for jurisdictional decision | | <i></i> | | | | |
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| This data form can be used for the Assessment Procedure. Classification according to "Soil Ta" | Hydric Soi | | • | | nmun ty | |
| | Project/Site: Applicant/Owner: FPA Applicant/Owner: FPA Note: If a more detailed site description of the applicant of the conditions of | Applicant/Owner: THE Note: If a more detailed site description is nectored. If a more detailed site description is nectored. If no, explain on back) Do normal environmental conditions exist at the yes. No (If no, explain on back) Has the vegetation, soils, and/or hydrology bee yes. No (If yes, explain on back) Dominant Plant Species Status 1. Consc. Commonum HACANT 2. Suity CELAUA. 3. Ulmis ryler of FRC 4. Soils Explain on back) 6. Fagure yes from FRC 7. B. 9. 10. Percent of dominant species that are OBL, FA Is the hydrophytic vegetation criterion met? Rationale: Series/phase: Miller (Doing From No Matrix Color: Dyn Herse) Is the soil a Histosol? Yes No Matrix Color: Dyn Herse Is the hydric soil indicators: Is the hydric soil criterion met? Yes Is the soil saturated? Yes No Depth to free-standing water in pit/soil probe herse the wetland hydrology criterion met? Yes Rationale: Is the plant community a wetland? Yes Rationale for jurisdictional decision JURISDICTIONAl Is the plant community a wetland? Yes Rationale for jurisdictional decision | Project/Site: ACS Applicant/Owner: EPA Plan Note: If a more detailed site description is necessary, us Do normal environmental conditions exist at the plant co Yes No (If no, explain on back) Has the vegetation, soils, and/or hydrology been signific. Yes No (If yes, explain on back) VEGE Indicator Dominant Plant Species Status Stratum 1. Canya Emmonum FACM 2. Salay Estava USC 3. Ulands a Marca FAC 4. Salay Estava FAC 5. Ond Pa Servibilis FACW 6. Educator Altarizaria FAC 7. 8. 9. 10. Percent of dominant species that are OBL, FACW, and/ Is the hydrophytic vegetation criterion met? Yes V Rationale: Series/phase: Michibile Doctor From Mottle Other hydric soil indicators: Is the soil a Histosol? Yes No Histic epi Is the soil salicators: Is the hydric soil criterion met? Yes No Rationale: 1115 Cliv Pri C V: Fri HYDR Is the ground surface inundated? Yes No Depth to free-standing water in pi/soil probe hole: List other field evidence of surface inundation or soil salic Is the wetland hydrology criterion met? Yes No Rationale: JURISDICTIONAL DETER Rationale for jurisdictional discision JURISDICTIONAL DETER | Project/Site: ACS Applicant/Owner: EAA Note: if a more detailed site description is necessary, use the back of data Do normal environmental conditions exist at the plant community? Yes No (if no, explain on back) Has the vegetation, soils, and/or hydrology been significantly disturbed? Yes No (if yes, explain on back) VEGETATION Indicator Stratum Dominant Plant S 1. Cannet EAA 11. Cannet EAA 12. 12. 12. 13. 14. 15. 16. 12. 12. 13. 14. 15. 15. 15. 15. 15. 15. 15. 15. 15. 15 | Project/Site: ASS State: TL County Applicant/Owner: EAS Plant Community a Name: Jant Community Plant C | Project/Site: ACS Applicant/Owner: ELM Plant Community #Name: |

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

R. N. ... <

| | Field Investigator(s): | <u> 15 </u> | | | Date: | | | |
|--------------|---|---|--------------------------------|--|------------------------|-------------|-------------|--|
| | Project/Site: ACS | | | State: IN | Date: | AKE_ | | |
| | Applicant/Owner: EPA | | Plan | t Community #/ | Name: _M | | | |
| | Note: If a more detailed site descri | ption is nec | essary, us | e the back of da | ta form or a field | notebook. | | |
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| | Do normal environmental condition | s exist at the | e plant co | mmunity? | | | | |
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| del shect | 7. Spires alba | FACWY | | | | | | |
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| | Percent of dominant species that a | ORI EA | CW and | OF EAC | 078 | | | |
| _ | Is the hydrophytic vegetation criter | ion met? | Vac J | No. | | | | |
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| • | Is the plant community a wetland? Rationale for jurisdictional decision | | | <u> </u> | | | | |
| | 1 This data form can be used for the Assessment Procedure. 2 Classification according to "Soil T | e Hydric So | | | | | • | |
| | | | | | _ | | | |

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD¹

| | Do normal environmental conditions Yes No (If no, explain Has the vegetation, soils, and/or hy Yes No (If yes, explain | n on back) drology been signilic | • | |
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| | Percent of dominant species that a is the hydrophytic vegetation criteric Rationale: Series/phase: Plain field fine is the soil on the hydric soils list? Is the soil a Histosol? Yes Is the soil: Mottled? Yes Matrix Color: 7.5 YR Y 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | Yes No HYDR | OILS Subgroup: Typic U Undetermined pedon present? Yes No Colors: | lo |
| | Percent of dominant species that a is the hydrophytic vegetation criteric Rationale: Series/phase: Plain field fine is the soil on the hydric soils list? Is the soil a Histosol? Yes Is the soil: Mottled? Yes Matrix Color: 7.5 YR Y 5 5 4 2. Other hydric soil indicators: Is the hydric soil criterion met? Yes Rationale: | Yes No HYDR Yes No HYDR Yes No HYDR Yes No HYDR | OILS Subgroup: Typic U Undetermined pedon present? Yes N Yes No Colors: IOLOGY Surface water depth: | lo |
| | Percent of dominant species that a ls the hydrophytic vegetation criteric Rationale: Series/phase: Plain field fine Is the soil on the hydric soils list? Is the soil a Histosol? Yes Is the soil: Mottled? Yes Matrix Color: 7.5 YR Y/6 S4/2. Other hydric soil indicators: Is the hydric soil criterion met? Yes Rationale: Is the ground surface inundated? Is the soil saturated? Yes Depth to free-standing water in pit/s | Yes No Histic epi No Gleyed? Yes No Histic epi No Gleyed? No Histic epi No No Histic epi No Hottle HYDR Yes No HYDR Yes No HYDR Yes No HYDR Inundation or soil sat | OILS Subgroup: Typic U Undetermined pedon present? Yes No Colors: OLOGY Surface water depth: Uration. | lo |
| | Percent of dominant species that a is the hydrophytic vegetation criteric Rationale: Series/phase: Plainfield fine is the soil on the hydric soils list? Is the soil a Histosol? Yes Is the soil: Mottled? Yes Matrix Color: 7.5 YR Y/6 Str. Other hydric soil indicators: Is the hydric soil criterion met? Yes Rationale: Is the ground surface inundated? Is the soil saturated? Yes Depth to free-standing water in pit/s List other field evidence of surface is the wetland hydrology criterion materials. | Yes No HYDR Yes No HYDR Yes No Worlde Yes No | OILS Subgroup: Typic U Undetermined pedon present? Yes No Colors: OLOGY Surface water depth: Uration. | |

DATA FORM ROUTINE ONSITE DETERMINATION METHOD¹

| | Do normal environmental conditions Yes No (If no, explain Has the vegetation, soils, and/or hyd Yes No (If yes, explain | on back) Irology bee | on significa | antly disturbed? | | | - · · · · · · · · · · · · · · · · · · · |
|--------------|--|----------------------------|--|---|---------------------|-------------|---|
| | | Indicator | VEGE | TATION Let | | Indicator | |
| rd. | Dominant Plant Species | Status | | Dominant Plant | | Status | Stratum |
| | 1 Poulus de Hoides | | | 11.25kgasie | <u>ासक्</u> रिक रूप | _ FAL- | Corrani |
| J 160 | 2 Prypus pennsylvavica | * PCU | | | | | |
| docum | Lornus stapulara | FACW | , | | | | |
| e. | 5 (треновия илетия | More | | · · · · | | | |
| LE. | 6. Roda carolina | FACU- | | | | | |
| į | 7. agrico- ca pulescens | | | | | | |
| iu . | 9 Malium apprint | | | | | | |
| id sierry | Percent of dominant species that ar | FACW- | <u> </u> | 20 | | | |
| • | 7 | | | DILS | | • | 1. |
| | Is the soil on the hydric soils list? Is the soil a Histosol? Yes | No | No — Histic epi Gleyed? | Subgroup Undetermin pedon present? Yes No | Yes No _ | | ments |
| | Is the soil on the hydric soils list? Is the soil a Histosol? Yes Is the soil: Mottled? Yes Matrix Color: LD YE 44 dask Other hydric soil indicators: Is the hydric soil criterion met? Ye Rationale: | Yes No No Ilman b | No Histic epi Gleyed? La Mottle | Subgroup Undetermin pedon present? Yes Note Colors: | Yes No | | mints |
| | Is the soil on the hydric soils list? Is the soil a Histosol? Yes Is the soil: Mottled? Yes Matrix Color: LD YE 44 dask Other hydric soil indicators: Is the hydric soil criterion met? Ye Rationale: Is the ground surface inundated? | Yes | No Histic epi Gleyed? Mottle | Subgroup Undetermin pedon present? Yes No Colors: | Yes No | | ments |
| | Is the soil on the hydric soils list? Is the soil a Histosol? Yes Is the soil: Mottled? Yes Matrix Color: LD YE 44 dask Other hydric soil indicators: Is the hydric soil criterion met? Ye Rationale: | Yes Yes No | No Histic epi Gleyed? Mottle No HYDR | Subgroup Undetermin pedon present? Yes Ni Colors: OLOGY Surface wate | r depth: | | |
| | Is the soil on the hydric soils list? Is the soil a Histosol? Yes Is the soil: Mottled? Yes Matrix Color: LD YR 444 doubt. Other hydric soil indicators: Is the hydric soil criterion met? Ye Rationale: Is the ground surface inundated? Is the soil saturated? Yes Depth to free-standing water in pit/si | YesYesNo | NoHistic epi Gleyed? Mottle NoHYDR No | Subgroup Undetermin pedon present? Yes Note Colors: OLOGY Surface wate | r depth: | | |
| | Is the soil on the hydric soils list? Is the soil a Histosol? Yes Is the soil: Mottled? Yes Matrix Color: LD Y Yes Other hydric soil indicators: Is the hydric soil criterion met? Ye Rationale: Is the ground surface inundated? Is the soil saturated? Yes Depth to free-standing water in pit/s List other field evidence of surface in Is the wetland hydrology criterion me Rationale: | Yes | No | Subgroup Undetermin pedon present? Yes Note Colors: OLOGY Surface wate | r depth: | | |

| | D.C. | NUTINE OF | | FORM | ION METHOD! | | | | | |
|--|--|-------------|--------------|---------------|----------------|----------------|-------------|--|--|--|
| | | • | ישווב שבי | CHMINA | ION METHOD | | | | | |
| | | ms_ | | | Date: _ | 1275 | | | | |
| | Project/Site: ACS Applicant/Owner: EPA | | | State: | County | | | | | |
| | • • | | | | ity #/Name:K | field notebook | | | | |
| | Note: If a more detailed site description is necessary, use the back of data form or a field notebook. | | | | | | | | | |
| | Do normal environmental conditions exist at the plant community? | | | | | | | | | |
| | YesNo(If no, explain on back) Has the vegetation, soils, and/or hydrology been significantly disturbed? | | | | | | | | | |
| | | | en significa | intly disturt | oed? | | | | | |
| | Yes No (If yes, explai | n on back) | | | | | | | | |
| | | | VECE | TATION | | | | | | |
| | | Indicator | 7202 | 1211011 | | Indicator | | | | |
| and o | Dominant Plant Species | Status | Stratum | Dominant | Plant Species | Status | Stratum | | | |
| Colloninos | 1. Populus delleras | FACT | | 11 | | | | | | |
| g riofilar | 2. P. szawiertata | FACUL | | 12 | | | | | | |
| M Willow | 3. Salid rugia | ob! | | 13 | | | | | | |
| ed onier treur | 4. (Dinew stolonifero | | | | | | | | | |
| miles elderberry | 6 Conceles Sensibilis | FACW. | | - | | | | | | |
| intime ferm | 7 Ludio qua alandulosa | . — | | | | | | | | |
| wed straw | 8 Gulyan rearing | FALU | | | | | | | | |
| ecotel broom | 9 Citions accommo | | | | | | | | | |
| jump sewlerry | 10. Rhenshieplein | FALW | | 20 | | | | | | |
| 0 | Percent of dominant species that are OBL, FACW, and/or FAC | | | | | | | | | |
| 1.00 | Is the hydrophytic vegetation criterion met? Yes No | | | | | | | | | |
| The state of the s | Rationale: | | | | | | | | | |
| O | | | | | | | | | | |
| | •0• | _ | | ILS | - . | | . 1 | | | |
| | Series/phase: Maumee loc | the proper | ne Su | Sub | group:2 Lypic | Haplagu | حالك | | | |
| | Series/phase: Naumee loany fine Surd Subgroup: 2 Lypic Hapla quell's ls the soil on the hydric soils list? Wes No Uncetermined | | | | | | | | | |
| | Is the soil a Histosol? Yes | No | Histic epip | ædon presi | ent? Yes | No | | | | |
| | Is the soil: Mottled? Yes | K OYAU | | | No | | | | | |
| _ | Matrix Color: WYR 3/1 very disk gray Mottle Colors: | | | | | | | | | |
| UV10 | Is the hydric soil criterion met? Yes V No | | | | | | | | | |
| 0 | Rationale: n.cets discrete ocitecia | | | | | | | | | |
| | | | | | | | | | | |
| | HYDROLOGY | | | | | | | | | |
| | Is the ground surface inundated? Yes No Surface water depth; | | | | | | | | | |
| | Is the soil saturated? Yes No | | | | | | | | | |
| مُحِفِين | Depth to free-standing water in pit/s | | | | | | | | | |
| A | List other field evidence of surface i | nundation (| or soil satu | ration. | | | | | | |
| • | Is the wetland hydrology criterion met? Yes No | | | | | | | | | |
| | , , , | _ | | | | | | | | |
| | Rationale: | | | | | | | | | |
| | JURISDICTIONAL DETERMINATION AND RATIONALE | | | | | | | | | |
| | • | | | | | · - | | | | |
| | Is the plant community a wetland? | | | | | | | | | |
| | Rationale for jurisdictional decision: | | | | | | | | | |
| | | | | | | | | | | |
| | 1 This data form can be used for the Hydric Soil Aesessment Procedure and the Plant Community | | | | | | | | | |
| | Assessment Procedure, 2 Classification according to "Soil Taxonomy." | | | | | | | | | |
| | Crassification according to Consta | | | | | | | | | |

DATA FORM ROUTINE ONSITE DETERMINATION METHOD¹

| | Field Investigator(s): K. NIMS Project/Site: ACS | State IN | Date: LAKE | |
|-------------------|--|-------------------------------|--------------------------|--|
| | Applicant/Owner: EPA | — Plant Community #/Nar | | |
| | Note: If a more detailed site description is neces | ssary, use the back of data t | orm or a field notebook. | |
| | | | | - |
| • | Do normal environmental conditions exist at the | plant community? | | |
| | Yes No (If no, explain on back) | | | |
| | Has the vegetation, soils, and/or hydrology been | significantly disturbed? | | |
| | Yes No (If yes, explain on back) | | | |
| | | | | |
| | Indicator | VEGETATION | Indicate | |
| | | Stratum Dominant Plant S | | Stratum |
| King Aspen | 1 Peculus tremendes FAC | 116.069.00 | | |
| oak | 2 Quercus polystris +HCW | 12 Veriaguni | | |
| rict paic | 3 Q.coccinect none | 13 044044 | | |
| palk | 4 a, relatina none | 14 | | |
| er was | 7 | 15 | | |
| per terminate act | 6 Corner Stolonifera FACW | 16 | | |
| hokeberry | 7 Amia ar butite lies none | 17 | | |
| e mullery | 8 Salex nigra co | 18 | | |
| tent firm | 9 Circles Scholing FACW | | | |
| he | 10. there exculenta none | 20 | | |
| | Percent of dominant species that are OBL, FAC | W, and/or FAC OC | 970 | |
| | Is the hydrophytic vegetation criterion met? Y | es No | | |
| V - | Rationale: | | | |
| | | | | |
| | 0): • • • • • | SOILS | | |
| | Series/phase: Plaintield fine Sa | 3:-Cl Subgroup:2 | Typic Udysi | · · · · · · · · · · · · · · · · · · · |
| | | No Undetermined | 1 <u> </u> | |
| | | listic epipedon present? Ye | | |
| | Is the soil: Mottled? Yes No O | Sleyed? Yes No _ | | |
| | - , | _ Mottle Colors: | | |
| · , O | Other hydric soil indicators: ———————————————————————————————————— | 10 | | |
| <u> </u> | Rationale: | <u></u> | | |
| | | | | |
| | | HYDROLOGY | | |
| | | | | |
| | Is the ground surface inundated? Yes | No Surface water d | epth: | |
| | Is the soil saturated? Yes No Depth to free-standing water in pit/soil probe holds | | | |
| • | List other field evidence of surface inundation or | | | |
| no | Elst billet flote evidence of service mercens. | | | |
| • . | Is the wetland hydrology criterion met? Yes | No | | - |
| | Rationale: | | | |
| | | | | |
| | JURISDICTIONAL | DETERMINATION AND RA | ATIONALE | |
| | | | · — - | |
| | Is the plant community a wetland? Yes | | | |
| | Rationale for jurisdictional decision: | • | | |
| | | | | |
| | • | | | |
| | ¹ This data form can be used for the Hydric Soil. | Assussment Procedure and | the Plant Community | |
| | This data form can be used for the Hydric Soil. Assessment Procedure. Classification according to "Soil Taxonomy." | Assessment Procedure and | the Plant Community | |

DATA FORM ROUTINE ONSITE DETERMINATION METHOD¹ Date: ____County: LAKE Field Investigator(s) Project/Site:_# Applicant/Owner: ____ Plant Community #/Name: ____ Note: If a more detailed site description is necessary, use the back of data form or a field notebook. Do normal environmental conditions exist at the plant community? Yes _____ No ____ (If no, explain on back) Has the vegetation, soils, and/or hydrology been significantly disturbed? Yes ____ No ___ (If yes, explain on back) **VEGETATION** Indicator Indicator Stratum Dominant Plant Species Dominant Plant Species Status Status Ricciocaipis nations none nene 2 Recaia fluitans for reprood embunitioned __ 14. 15. 16. 20. . Percent of dominant species that are OBL, FACW, and/or FAC ______ 10070 Is the hydrophytic vegetation criterion met? Yes ____ No ____ SOILS Series/phase: Maune learny fine sand subgroup? Jupic Hay a rue 1/5 Is the soil on the hydric soils list? Yes ____ No ___ Undetermined Is the soil a Histosol? Yes ____ No ___ Histic epipedon present? Yes ____ Is the soil: Mottled? Yes No Gleyed? Yes No Matrix Color: Al 2/0 Dlack Mottle Colors:

Other hydric soil indicators: Currole to get acreal sunyte, in standing water Is the hydric soil criterion met? Yes No_ Rationalo: Wheets Chrown (Equipment HYDROLOGY No ____ Surface water depth: 6 173 -Is the ground surface inundated? Yes Is the soil saturated? Yes ____ No Depth to free-standing water in pit/soil probe hole: ... List other field evidence of surface inundation or soil saturation. Is the wetland hydrology criterion met? Yes ____ No ____ Rationale: JURISDICTIONAL DETERMINATION AND RATIONALE Is the plant community a wetland? Yes _____ No ____ Rationale for juriscictional decision. 1 This duta form can be used for the Hydric Soil Assessment Procedure and the Plant Community

Assessment Procedure.

² Classification according to "Suil Taxonomy."

DATA FORM ROUTINE ONSITE DETERMINATION METHOD¹

| | Project/Site: ACS State: IN County, LAICE Applicant/Owner: EPA Plant Community #/Name: V |
|-------------------|--|
| | Note: If a more detailed site description is necessary, use the back of data form or a field notebook. Do normal environmental conditions exist at the plant community? Yes No (If no, explain on back) Has the vegetation, soils, and/or hydrology been significantly disturbed? Yes No (If yes, explain on back) |
| owleaf outfail | VEGETATION Indicator Dominant Plant Species Status Stratum Dominant Plant Species Status Stratus S |
| | 4. 14. 5. 15. 6. 16. 7. 17. 8. 18. 9. 19. 10. 20. |
| م م | Percent of dominant species that are OBL, FACW, and/or FAC 100% Is the hydrophytic vegetation criterion met? Yes No Rationale; |
| ونز | Series/phase: MUMMER locking fine Sand Subgroup: Will hapia Guar Is the soil on the hydric soils list? Yes No Undetermined Is the soil a Histosol? Yes No Histic epipedon present? Yes No Is the soil: Mottled? Yes No Gleyed? Yes No Mottle Colors: Other hydric soil indicators: Lander Work of the hydric soil criterion met? Yes No Rationale: Meet Chrono Criterion Criterion Colors: |
| () <u>G</u> O' | HYDROLOGY Is the ground surface inundated? Yes No Surface water depth; 6 - 15 Inches Is the soil saturated? Yes No Depth to free-standing water in pit/soil probe hole: List other field evidence of surface inundation or soil saturation. |
| ₹ | Is the wetland hydrology criterion met? Yes No Rationale: |
| | JURISDICTIONAL DETERMINATION AND RATIONALE |
| | Is the plant community a wetland? Yes No |
| | This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure. Classification according to "Soil Taxonomy." |

| | 80 | UTIME ON | | FORM | tuon1 | | |
|-----------------------------|--|-------------------------|---------------|-------------------|-----------------------|--|------------------|
| | <i>a</i> . \ | ms. | SHEDE | EMMINATION ME | Date: | | |
| | Project/Site: ACS | | | State: +N | _ County: LA | CE | |
| | Applicant/Owner: EPA | <u></u> | Plan | t Community #/Na | | | |
| | Note: If a more detailed site descrip | ition is nec | | | | | |
| | | | | | | | - · · |
| | Do normal environmental conditions Yes No (If no, explain Has the vegetation, soils, and/or hyd Yes No (If yes, explain | on back) drology bee | • | • | | | |
| | | | VEGE | TATION | | | |
| | | Indicator | | | | Indicator | |
| | Dominant Plant Species | Status | Stratum | Dominant Plant S | Species | Status | Stratum |
| 2 Law | 1 Go Hum Chourem | FACU | | 11 | | | |
| 100 | 2 The lypters is the lypteroider | FACW | | 12. | | | |
| Ktein | 3 Oncolea Generalis | FACW | | • | | | |
| of NAME LEGIS | 4 win anaustitolia | | | 1J | | | |
| consecut cartees | | 701 | | 14 | | | |
| plusting how | 5. U'Sulty Access | 100 | | · J. ———— | | | |
| prompt specification | 6. Cornes amenimum | FACHI | | 16 | | | |
| Coding degiane | 7. Apocymum and lesse mitelium | NON- | | 17 | | | |
| المترنيلة وسامي | 8. Satistilly | | | 18 | | | |
| المستريد والمستريد | 9. Spilen Ations | cons | | 19 | | | |
| neval in Sweet | 10 | | | 20 | ~ | | |
| | Percent of dominant species that are | e ORL FA | CW and/ | NEAC 83. | 3% | | |
| | Is the hydrophytic vegetation criterio | on met? | Vac . | No. | | | |
| > | Rationale: | on mor: | | . *** | | | |
| $\mathcal{O}_{\mathcal{I}}$ | nationale. | | | | | | |
| Ü | | | | | | | |
| | Α | _ | SO | ILS | | : | |
| | Series/phase: Housance Inter | out track | لك ١ منتا | Subgroup: | 1 1 1 1 1 1 1 1 1 1 1 | 1 12 24 | ا لا أَنْ |
| | Series/phase, | | | | | · : ; · - | |
| | Is the soil on the hydric soils list? | Yes | _ No | | | | |
| | | | | pedon present? Yo | | | |
| | Is the soil: Mottled? Yes | No | | | <u> </u> | | |
| المندر | Matrix Color: N 2/0 Black | | Mottle | Colors: | | | |
| fla | Other hydric soil indicators: | Charlet - | pont | mundois! | <u> </u> | | |
| 17 Jan | Is the hydric soil criterion met? Ye | s | Ńo | | | | |
| Λ | Rationale: nicets of 15 | 100 | · 5 7 LL | <u> </u> | | | |
| V | | | - | | | | |
| | | | | | | | |
| | | j | HYDR | DLOGY | 1 - | 0 1 | r |
| | Is the ground surface inundated? | Yes 🗸 | No | Surface water | depth: 6 | 0 1 | <u> </u> |
| | Is the soil saturated? Yes | No | | | | | |
| , | Depth to free-standing water in pit/st | oil probe he | ole: | | | | |
| _ | List other field evidence of surface in | | | | | | |
| W 80 | Fist Office the Annual or Sautage | | | | | | |
| X | Is the wetland hydrology criterion me | el? Yes_ | | | | | |
| U | Rationale: | | | | | | |
| | | | | | | | |
| | JURISO | DICTIONAL | | MINATION AND R | | | |
| | is the plant community a wetland? | Yes | No | | | | |
| | Rationale for jurisdictional decision | | | | | | |
| | • | | | | | | |
| | | - | | | · | | · · |
| | 1 This data form can be used for the | Hydric Soil | Assessni | ent Procedure and | the Plant Comm | iunty | |
| | Assessment Procedure: | | | | | | |
| | ² Classification according to *Soil Tail | renomy - | | 4 | | | |
| | Citizen denomination of a contract of the cont | - , | | | | | |

| | | _ | ATA FORM | ruoni | | | |
|-----------------|--|---------------------------------------|---------------------------------------|--------------------|--|---------|---------|
| | Endelmonian P. A | IMS | DETERMINATION ME | IHOD. | | | |
| | Field Investigator(s): | | State: IN | County: LI | AKE | | |
| | Applicant/Owner: | <u> 4 </u> | Plant Community #/Na | me:Y | | | |
| | Note: If a more detailed site de | scription is necessal | ry, use the back of dala | form or a field no | 10000K. | | |
| | Do normal environmental condition | tions exist at the pla | nt community? | | | | |
| | Yes No (If no, ex) | | milicantly disturbed? | | | | |
| | Yes No (If yes, ex | | • | | | | |
| | | · | EGETATION | | | | |
| | 0 | Indicator | | | Indicator | | |
| Sandles and low | Dominant Plant Species | Status Stra | Dominant Plant S | | Status | Stratum | • |
| white oak | 1. Euchist Villa | FACU | 12 Hamanel | | TACU | | ME POSC |
| Thinko | J. 7 | FACT | 13 | | | | |
| to the | 4. Where we allowed | <u> </u> | | | | | |
| year w | 2 Divine a marchist | 430 <u>1/C</u> | | | | | |
| A Deal of | 1, 7 Augus a congruenting | 110 Opt | · 17 | | | | |
| re constitute | 8. Spendager Settlede | <u>á</u> <u>P</u> ::(| 18 | | | | |
| 90,121,000 | 20 Course stoloude | a FACW | 19 | | | | • |
| ud our sein | Percent of dominant species th | at are OBL. FACW. | and/or FAC | 90 | | | |
| | Is the hydrophytic vegetation cr | riterion met? Yes | ✓:_ No | | | | |
| V 30 | Rationale: | | | | | | • |
| X | | | SOILS | | | | • |
| | Series/phase: Lice in the last | area tribe | Subgroup: ² | Typic he | None | 10/15 | |
| | Is the soil on the hydric soils list | ? Yes - No | Undetermine | | / | | |
| | Is the soil a Histosol? Yes | | c epipedon present? Yo | | _ | | |
| _ | Is the soil: Mottled? Yes Matrix Color: 1970 | | ed? Yes No lottle Colors: | | | | |
| مور | Other hydric soil indicators: — | | | | | | |
| <u> </u> | Is the hydric soil criterion met? Rationale: 1. 4. 2.45 (1.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4 | | · · · · · · · · · · · · · · · · · · · | | | | |
| _ | Mationale: | 3.4 | <u> </u> | | | | • |
| | | н | YDRO <u></u> | | | | |
| | Is the ground surface inundated | | Surface water | depth: | | | - |
| _ | Is the soil saturated? Yes | No | | | | | |
| USCO | Depth to free-standing water in List other field evidence of surfa | | | | · · · · · · · · · · · · · · · · · · · | | , |
| <i>(</i>) | is the wetland hydrology criterio | | | | | | |
| | Rationale: | · · · · · · · · · · · · · · · · · · · | | | | | |
| | JU | RISDICTIONAL DE | TERMINATION AND R | ATIONALE | | | |
| | Is the plant community a wetlan | | | | | | |
| | Rationale for jurisdictional decis | | | | | | |
| | 1 This data form can be used for | | | | | | |
| | Assessment Procedure. ² Classification according to "So | il Taxonomy." | | | | | |

| - | 1) 4: | | | FORM FERMINATION ME | THOD1 | | |
|-----------------|--|---------------------------|--|---|----------------------|---------------|------------|
| | Field Investigator(s): KINIM | 15 | | | Date: | · | |
| | Project/Site: HS | | | State: 10 | Date: County: _L. | 4KE | |
| | Applicant/Owner: EPA | | Plan | t Community #/Na | me: | | |
| | Note: If a more detailed site descrip | pilon is nec | essary, us | | TORM OF A THE OF | 1018000A. | - . |
| | Do normal environmental condition: Yes No (If no, explain Has the vegetation, soils, and/or hy Yes Ito (If yes, explain | n on back) drology bee | • | • | | | |
| | | | VEGE | TATION | | | |
| | | Indicator | | | | Indicator | |
| ره. مد ۸ | Dominant Plant Species | Status | Stratum | Dominant Plant S | pecies | Status | Stratum |
| murled wilt | bil , but her argustistica | بريخز | | 11. | | | |
| arer | 2. Blesia saculenta | ain. | | 12 | | | |
| | 3. 4 050 Mitide | | | 13 | | | |
| In Manager | 4 Die vergeren virgnes | | | | | | |
| ned to be | 5 Yus wie Coccinea | - POLIE | | 15 | | | |
| de mk | U | TREU | | 16 | | | |
| here'n look | 7. Quercus rubits | FACH | | 17 | | | |
| See brick | 8. Both a illegitioner | WING | | 18 | | | |
| | 9 | | | 19 20 | | - | |
| | | | | - 11 ~ | 9 | | |
| No | Percent of dominant species that a is the hydrophytic vegetation criteri Rationale: | | | | | | |
| | Series/phase: Maurice Is the soil on the hydric soils list? Is the soil a Histosol? Yes Is the soil: Mottled? Yes Matrix Color: Bis Other hydric soil indicators: Is the hydric soil criterion met? Yes Rationale: | No ✓ | No No Histic epip Gleyed? Mottle | Subgroup: ² Subgroup: ² Undetermined bedon present? Yes Yes Colors: | sNo | oplo z | usl1 |
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¹ This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

² Classification according to "Soil Taxonomy."

B-2

DATA FORM ROUTINE ONSITE DETERMINATION METHOD¹ Project/Site: - State: IN County: LAICE Do normal environmental conditions exist at the plant community? Yes _____ No ____ (If no, explain on back) Has the vegetation, soils, and/or hydrology been significantly disturbed? Yes ____No ____ (If yes, explain on back) **VEGETATION** Indicator Indicator Dominant Plant Species Status Status Stratum Dominant Plant Species Stratum 1 Quercus borrelis none ____ 11. _ 2. Queius velution none 12. ~ 5. Stendarthium grammum TAC. _____ 15. ______ _____ 16. _______ 7. Verbasium Haspus por _____ 17. ______ 8. Vilis arstivolis FACY _____ 18. -------Caltha Dulystris obl ____ 19. ______ 10 Dipsacus sylvestris More Percent of dominant species that are OBL, FACW, and/or FAC Is the hydrophytic vegetation criterion met? Yes ____ No ___ Rationale: ____ SOILS Series/phase: 11a... Subgroup: 2 Typic Usinsa 1315 Is the soil on the hydric soils list? Yes ____ No __ Undetermined Is the soil a Histosol? Yes ____ No ___ Histic epipedon present? Yes ____ Is the soil: Mottled? Yes_ No ____ Gleyed? Yes No Matrix Color: 10 YR 2/1 ___ Mottle Colors: _ Other hydric soil indicators: -Is the hydric soil criterion met? Yes No 🗴 ed stupiand countary sample point at an Rationale: Ivarsecica abbindoned railrows wed HYDROLOGY No U Surface water depth: Is the ground surface inundated? Yes ___ is the soil saturated? Yes ____ No ___ Depth to free-standing water in pit/soil probe hole: __ List other field evidence of surface inundation or soil saturation. **NO** is the wetland hydrology criterion met? Yes ____ No __ Rationale: ___ JURISDICTIONAL DETERMINATION AND RATIONALE Is the plant community a wetland? Yes ____ No _ Rationale for jurisdictional decision: _____

¹ This data form can be used for the Hydric Soil Assessment Precedure and the Plant Community Assessment Procedure.

² Classification according to "Soil Taxonomy."

ROUTINE ONSITE DETERMINATION METHOD¹ Date: County LAKE ---- State: 3 N Project/Site: AC Applicant/Owner: Plant Community #/Name: Name: Note: If a more detailed site description is necessary, use the back of data form or a mild notebook. Do normal environmental conditions exist at the plant community? Yes ____ No ____ (Il no, explain on back) Has the vegetation, soils, and/or hydrology been significantly disturbed? Yes _____ No ____ (If yes, explain on back) VEGETATION Indicator Indicator **Dominant Plant Species** Status Stratum Dominant Plant Species Status 1 Ludwicia slandulosa 100 2 Galum arrinum TACU _ 12. . 3 Rosa muttiflora FACU ____ 13. . of Sales endus FACU 5 Sondius precisis FAC-6. Kanatterhya Sinylus, nort 20. Percent of dominant species that are OBL, FACW, and/or FAC 60% Is the hydrophytic vegetation criterion met? Yes ____ No ___ Rationale: ---SOILS Series/phase: Maurice laancy fine Sand Subgroup:2 Is the soil on the hydric soils list? Yes ____ No ____ Undetermined Is the soil a Histosol? Yes ____ No ___ Histic epipedon present? Yes ___ Is the soil: Mottled? Yes ____ No __ Gleyed? Yes ___ No __ 0 Mottle Colors: _ Matrix Color: _ Other hydric soil indicators: ---Is the hydric soil criterion met? Yes No L Rationale: would to obtain Soil Someth Swindling sound or railroad. Combanication bordoning ditch and P/EM/SS onea **HYDROLOGY** Is the ground surface inundated? Yes No ____ Surface water depth: _____ Is the soil saturated? Yes ____ No ___ Depth to free-standing water in pit/soil probe hole: _ W 0 List other field evidence of surface inundation or soil saturation. Is the wetland hydrology criterion met? Yes ____ No ___ Rationale: ___ JURISDICTIONAL DETERMINATION AND RATIONALE Is the plant community a wetland? Yes ____ Rationale for jurisdictional decision 1 This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure. ² Classification according to "Soil Taxonomy."

DATA FORM

DATA FORM ROUTINE ONSITE DETERMINATION METHOD! - State: IN _ County....LAKE Project/Site: _ Applicant/Owner: _ - Plant Community #/Name: ___ H -> Note: If a more detailed site description is necessary, use the back of data form or a field notebook. Do normal environmental conditions exist at the plant community? Yes ____ No ____ (If no, explain on back) Has the vegetation, soils, and/or hydrology been significantly disturbed? Yes ____ No ___ (If yes, explain on back) VEGETATION Indicator Indicator Stratum Dominant Plant Species Dominant Plant Strucies Status Status : Viburnum prumbolium FALU 3. Ludwigia glandulosa obt 4 Ster ntheum grammeum FAL 5 Corylus americana 1 ACLI 10% Percent of dominant species that are OBL, FACW, and/or FAC Is the hydrophytic vegetation criterion met? Yes _____No_____ O Rationale: ___ m SOILS $_{-}$ Subgroup: 2 . No ____ Undetermined Is the soil on the hydric soils list? Yes is the soil a Histosol? Yes ____ No ___ Histic epipedon present? Yes Is the soil: Mottled? Yes ____ No __ Gleyed? Yes ___ No __ Matrix Color: _ ... Mottle Colors; _ Other hydric soil indicators: -100 Is the hydric soil criterion met? Yes ____ Rationale: Unable to Do ain- Soil beside the railroad or boundariest, too many rocks HYDROLOGY No V Surface water depth: 4-5, feet Is the ground surface inundated? Yes Is the soil saturated? Yes ___ Depth to free-standing water in pit/soil probe hole: __ List other field evidence of surface inundation or soil saturation. $\sigma_{\mathcal{H}}$ Is the wetland hydrology criterion met? Yes _____ No ____ JURISDICTIONAL DETERMINATION AND RATIONALE Is the plant community a wetland? Yes No Plant Community a wetland a wetland

¹ This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community.

Assessment Procedure.

² Classification according to "Soil Taxonomy"

| Haw Per Sold Sold Sold Sold Sold Sold Sold Sold | normal environmental conditions s No (If no, explain s the vegetation, soils, and/or hyd s No (If yes, explain commant Plant Species Calcum aparumum Choclea schistipilis Solida qualitish ma Dipsacus sylvestris Hupulus francies Ulumus rulora arcent of dominant species that a the hydrophytic vegetation criteriationale: | Indicator Status FACU THE COBL FACU TO OBL FA | VEGE Stratum | ETATION Dominant Pl. 11 12 13 14 15 16 17 18 19 20 | int Species | | |
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| | Project/Site: ACS LAINS Project/Site: ACS LAINS Project/Site: ACS LAINS Plant Community #/Name: N Note: If a more detailed site description is necessary, use the back of data form or a field notebook. |
|---|---|
| | Do normal environmental conditions exist at the plant community? YesNo(If no, explain on back) Has the vegetation, soils, and/or hydrology been significantly disturbed? YesNo(If yes, explain on back) |
| Phaking Hepen No schools in william The ex balls on grape | Dominant Plant Species Status Stratum Dominant Plant Species 1. Populus Transloides Fel 11. 2. Cornes animorium obl 12. 3. Salix nigra obl 13. 4. Colix exiguir obl 14. 5. Senanthium gramineum fill 15. 6. Vilis Valpina 16. 7 |
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| | Is the wetland hydrology criterion met? Yes No Rationale: |
| | JURISDICTIONAL DETERMINATION AND RATIONALE Is the plant community a wetland? Yes No Rationale for jurisdictional decision: |
| | This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure Classification according to "Soil Taxonomy" |



United States Department of the Interior

IN REPLY REFER TO:

FISH AND WILDLIFE SERVICE BLOOMINGTON FIELD OFFICE (ES) 718 North Walnut Street Bloomington, Indiana 47401 (812)334-4261

June 5, 1990

Mr. Robert Swale (5 HS-11) U.S. Environmental Protection Agency Office of Superfund Waste Management Division 230 South Dearborn Street Chicago, Illinois 60604

Dear Mr. Swale:

Enclosed is the Wetlands delineation report for the American Chemical Services site in Griffith, Indiana, performed under IAG-DW14934313-0.

If you have any questions regarding this report, please contact Robin Nims at FTS 332-4269.

Sincerely yours,

David C. Hudak

Supervisor

Wetlands Delineation at American Chemical Services Hazardous Waste Site, Griffith, Indiana. IAG-DW14934313-0

Robin A. Nims
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
718 North Walnut Street
Bloomington, Indiana

May 1990

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Summary

At the request of the U.S. Environmental Protection Agency, Region V, the U.S. Fish and Wildlife Service conducted a wetlands delineation for site wetlands potentially impacted by contaminants originating at the American Chemical Services (ACS) hazardous waste site.

Office review and field surveying indicated numerous wetlands exist at the ACS site, many of which are not identified on the National Wetland Inventory. The diversity of wetland types present provide habitat for a variety of wildlife species.

INTRODUCTION

The American Chemical Services (ACS) Superfund site is located in Griffith, Indiana on the outskirts of the city's southeast side. The site was placed on the National Priorities List in 1987 as a result of investigations into chemical disposal practices on the site. ACS operates as a chemical/solvent recovery facility, which also has a limited chemical manufacturing operation. During the course of its operations, ACS dumped and otherwise disposed of unrecoverable solvents on the property, in addition to transporting waste to the adjacent Griffith City Landfill. Kapica Drum, Inc. also allegedly disposed of drum-cleaning residues on ACS property. These 3 sites total 52 acres and jointly comprise the official ACS site.

The National Wetland Inventory (Figure 1) indicates numerous and extensive wetlands within a 1-mile radius of the ACS site to the southwest, south, southeast, east, and northeast. There is an extensive wetland complex adjacent to the northwest boundary of the site. These wetlands are dissected and bordered by the Grand Trunk Western Railroad lines, the Chesapeake and Ohio Railroad lines, and the abandoned Erie-Lackawanna Railroad lines. The wetlands to the north of the Grand Trunk Western lines were not within the project boundary limits, however, they are likely hydraulically connected. The NWI map classifies this wetland complex as palustrine, emergent, semi-permanent/plaustrine emergent, seasonally flooded. The entire complex is approximately 78 acres, however, only 50.5 acres were included in the present delineation.

OBJECTIVES

The objectives of this project were:

- To ground-truth and verify wetlands delineated on the National Wetland Inventory maps.
- 2. To identify other wetland areas not included in the National Wetland Inventory.
- 3. To identify dominant vegetation in the various wetland areas.
- 4. To assess relative value of the various wetland habitats for fish and wildlife resources.

METHODS

The methods utilized in this delineation are outlined in the Federal Manual for Identifying and Delineating Jurisdictional Wetlands (1989). Because of the relative homogeneity of the site, the soils assessment procedure was selected. Prior to the field work, an office review was conducted to preliminarily outline the area in question. Due to the unavailability of the most recent aerial photographs the preliminary boundaries were outlined from a 1984 photograph, obtained from the EPA project manager. Based upon the field inspection, the 1984 photograph was accurate with the exception of approximately 5 additional acres lost to the Griffith Landfill operation.

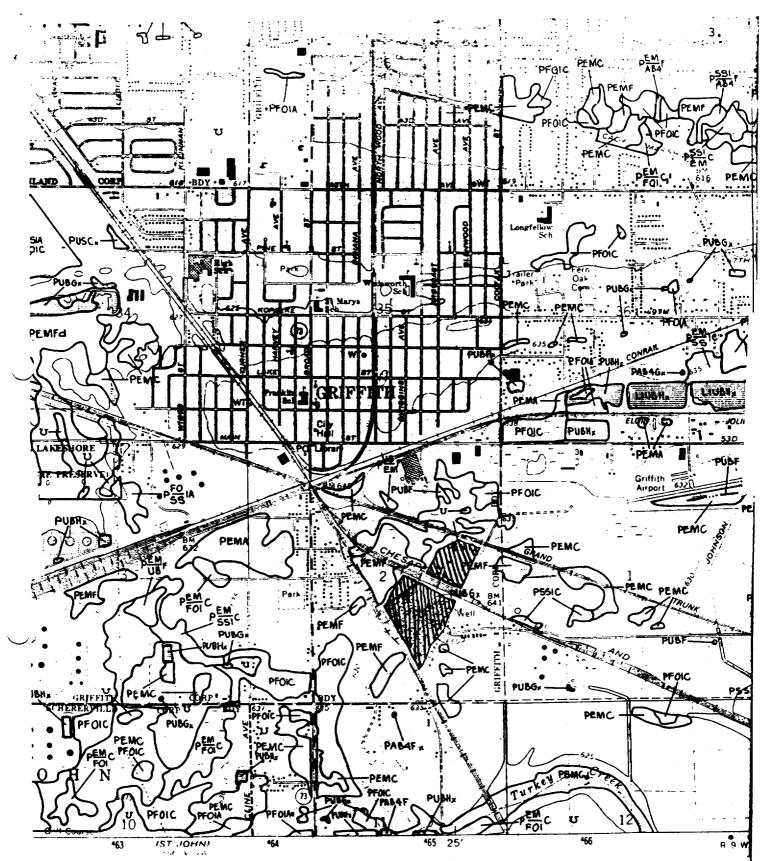


FIGURE 1. National Wetland Inventory map in the vicinity of the American Chemical Service site, Griffith, Indiana. USGS Highland Quadrangle. Cross-hatched area is ACS.

To transfer information from the aerial photograph, a clear plastic overlay was attached and the information transcribed. Points along the visual perimeter of the wetland were randomly selected and their compass bearings recorded to assist in field location. Location of the points followed the general contour of the visual perimeter and were arbitrarily located from 88 to 282 feet apart based upon a scale of 1 inch (in) - 25 millimeters (mm) - 220 feet (ft), 1 mm - 8.8 ft.

The preliminary map generated in the office (Figure 2) was used in the field reconnaissance flagging effort. In the field, point A was located on ground by its position relative to the railroad track embankment and the tree row in the upper northwest corner of the study area. Based upon the preliminary map, point B was located with the use of a Suunto MC-1 mirror compass and was measured off with a tape measure 220 feet S 66 E of point A. All other points were located and measured off in the same manner. Orange flags were placed at each point, and pink flags were placed every 55 feet to assist in maintaining the proper bearing alignment.

During the office review and map preparation a copy of the U.S. Soil Conservation Service Soil Survey for Lake County, Indiana (1972) was consulted to determine the presence or absence, and locations of hydric soils. The Lake County Indiana Survey sheet number 21 (Figure 3) indicates the majority of the area in question consists of Maumee loamy fine sand, interspersed with areas of Plainfield fine sand, Watseka loamy fine sand, and a small section of Tawas muck. The Maumee loamy fine sand and Tawas muck are classified by the U.S. Department of Agriculture and the Soil Conservation Service (1986) as hydric soils. To aid in the identification of the different soil types in the field, the soil profiles for Maumee loamy fine sand and Plainfield fine sand were recorded (Table 1). Because the soil sample probes were taken to a depth of 18 inches, only the first 3 incremented intervals were noted. Soil samples were collected at each point with a 21 inch Hoffer Soil Sampler probe. The soil samples were observed in the field and the lowest 3 inches were collected in whirl-pak bags for later comparisons to the Munsell Soil Color charts. Areas possessing standing water did not yield soil samples due to wash-out upon extraction of the probe. In these instances the whirl-pak bag containing the point location tags were transported back to the office empty.

Representative observation areas (Figure 4) were selected based upon several factors. In addition to selecting areas that met the hydric soil criterion, representative observation areas that had apparent characteristics, but were not identified on the National Wetland Inventory map were also chosen. The plant communities were characterized, and the percent areal cover of the dominant species in the communities were visually estimated. Samples of the dominant vegetation at each of the representative areas were collected in 8 gallon plastic bags and transported to the office for later identification. A list of references used is included in Appendix 1. Once the vegetation was identified the information was \cdot recorded on field data forms and the indicator status of the species was obtained from the National List of Plant Species that occur in Wetlands; Indiana (1988). A wetland determination was then made for each representative observation area based upon the 3 mandatory technical criteria; hydrophytic vegetation, hydric soils, and wetland hydrology, as outlined in the Federal Manual for Identifying and Delineating Jurisdictional Wetlands. The information obtained in the survey was used to prepare the final map of the site wetlands.

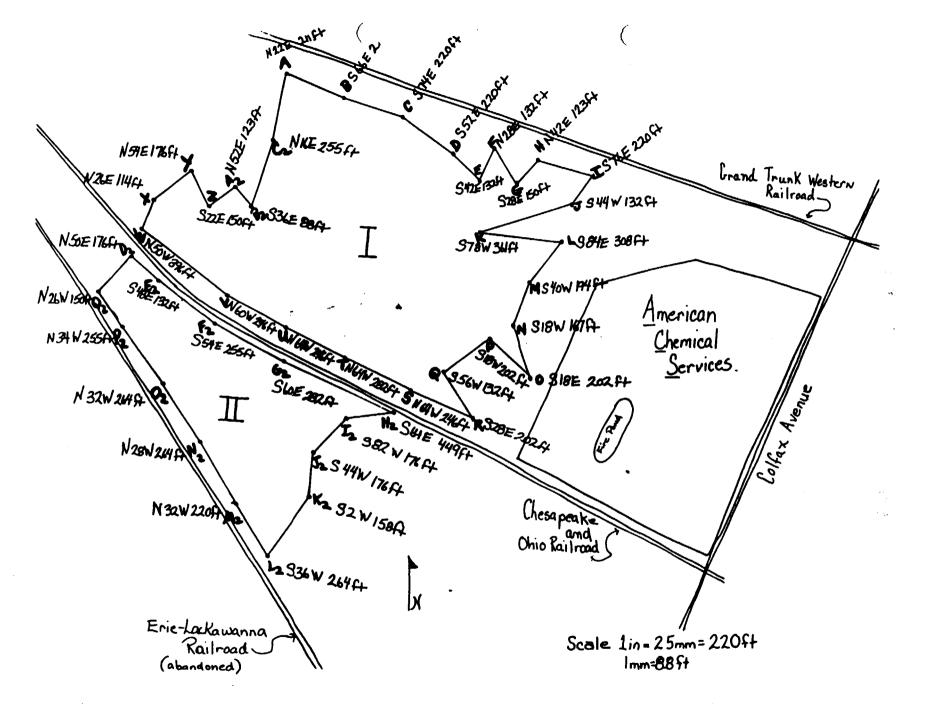


FIGURE 2. Preliminary wetland boundaries transcribed from 1984 aerial photograph. (Reduced 64%)

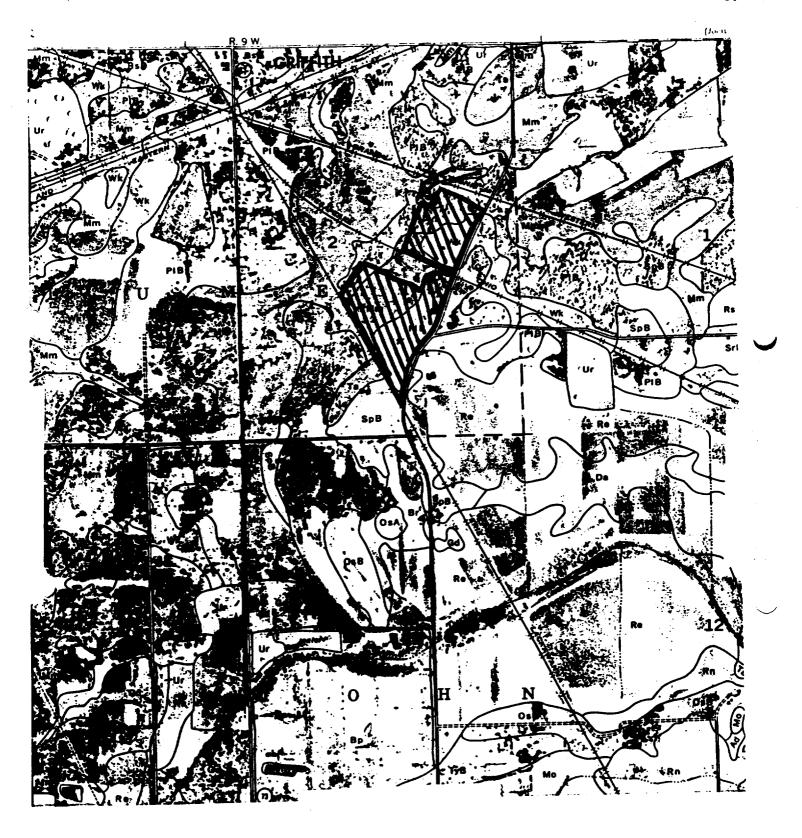


FIGURE 3. U.S. Soil Conservation Survey-Lake County. Plate number 21. Cross-hatched area is ACS. Shaded areas are hydric soils.

Table 1. Typical, Profiles for Maumee loamy fine sand (Hydric) and Plainfield fine sand (Non-hydric) in Lake County, Indiana.

| Maume | Maumee loamy fine sand | | | Plainf | Plainfield fine sand | | | | | | | |
|-------|------------------------|-------|---------------------|-------------|----------------------|---------------------|--|--|--|--|--|--|
| Depth | | Color | Munsell Notation | Depth | Color | Munsell Notation | | | | | | |
| 0-9 | inches | Black | N 2/0 | 0-4 inches | Dark Grey | 10 YR. 3/1 | | | | | | |
| -16 | inches | Black | N 2/0 | 4-6 inches | Greyish brown | 10 YR. 4/2 | | | | | | |
| 16-21 | inches | Black | N 2/0 | 6-27 inches | Yellowish brown | 10 YR. 5/4 | | | | | | |

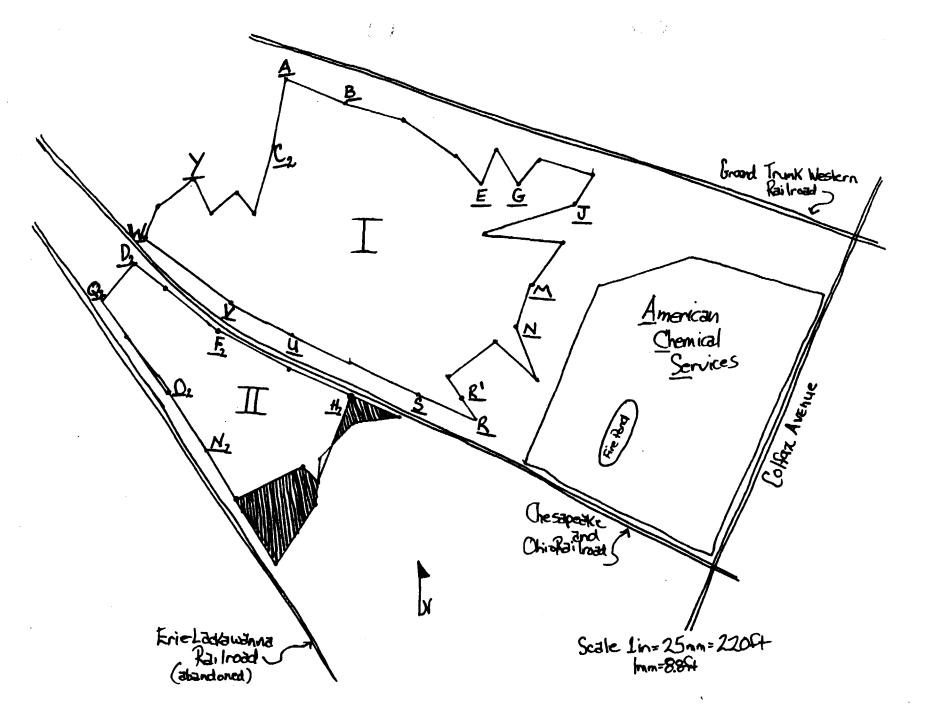


FIGURE 4. Representative observation areas for vegetation sampling. Cross-hatched area lost to landfill expansion $^{\circ}$

RESULTS AND DISCUSSION

Of the 21 representative observation areas sampled, 13 met all 3 mandatory technical criteria for wetland determination (Table 2). Of the 8 areas that failed the mandatory technical criteria test, N and $\rm H_2$ lacked all 3 criteria; M, R, S, and $\rm D_2$ lacked the hydric soils and wetland hydrology criteria; $\rm C_2$ lacked hydrophytic vegetation criteria; and $\rm F_2$ lacked wetland hydrology criterion.

Wetland I

Wetland I is bounded by the Grand Trunk Western Railroad, the American Chemical Services site, and the Chesapeake and Ohio Railroad. Based upon the results of the survey this area is more complex than the National Wetland Inventory (NWI) indicates (Figure 5). NWI shows this area as consisting of a large palustrine, emergent, semi-permanent mixed with seasonally flooded wetland. The NWI does not show any of the forested or scrub-shrub wetlands bordering the palustrine emergent area. Of the 5 representative observation areas that did not meet the technical criteria for wetland determination all were transitional zones between the wetland-upland interface because of the presence of non-hydric soils at 4 of the 5 areas. All of the areas possessed hydrophytic vegetation, but the percentage of FACU and UPL exceeded the percentage of FAC, FACW, and OBL species only at area N. It should be noted that some species were collected at the various areas that did not have indicator category designations; these species were not calculated into the percentages.

Wetland II

Wetland II is bounded by the Chesapeake and Ohio Railroad, the City of Griffith landfill, and the abandoned Erie-Lackawanna Railroad bed. Wetland II, according to the NWI is a palustrine, emergent, semi-permanent wetland. The various other habitat types surrounding it have been omitted from the official map.

This wetland area has been impacted due to past and present expansion of the City of Griffith Landfill. Approximately 5 acres of emergent/scrub-shrub/forested wetland on the north and southeast corners have been filled since the 1984 aerial photograph was taken. There is also a gravel road/turn-around that appeared to have been recently laid in the center of the palustrine, emergent, seasonally flooded wetland (Figure 5). This was probably an illegal fill; the U.S. Army Corps of Engineers has been notified.

There were 3 representative observation areas that did not meet the 3 technical criteria for wetland designation. These 3 areas, however, were placed along the railroad embankment, due to the location of a drainage ditch (approximately 5 feet deep) lying between the railroad tracks and the wetland area to the south of the ditch.

NATURAL RESOURCES

This field investigation indicated that the natural resources and natural resource values of the wetland habitats are greater than originally suspected because of the diversity of habitat types present: emergent, scrub-shrub, and forested.

Table 2. Results of the technical criteria test for 21 representative observation areas at the ACS site, Griffith, Indiana.

| Area | Soil Series | Hydrophytic Vegetat | Hydric | Soil | Wetland I | Hydrology | Wetland | Determination |
|----------------|------------------------|---------------------|--------|------|-----------|-----------|---------|---------------|
| | | % OBL. FACW, FAC | Yes | No_ | Yes | No | Yes | No |
| A | Maumee loamy fine sand | 85.5 | x | | Х | | x | |
| В | Maumee loamy fine sand | 100.0 | X | | X | | X | |
| E | Maumee loany fine sand | 85.7 | X | | X | | X | |
| G | Maumee loamy fine sand | 88.0 | X | | X | | X | |
| J | Maumee loamy fine sand | 100.0 | X | | X | | Х | |
| M | Plainfield fine sand | 60.0 | | X | | X | | X |
| N | Plainfield fine sand | 40.0 | | X | | X | | X |
| R^1 | Plainfield fine sand | 62.5 | | X | | X | | X |
| R | Maumee loamy fine sand | 77.0 | X | | X | | X | |
| S | Plainfield fine sand | 100.0 | | X | | X | | X |
| U | Maumee loamy fine sand | 100.0 | X | | X | | X | |
| v | Maumee loamy fine sand | 100.0 | X | | X | | X | |
| W | Maumee loamy fine sand | 83.3 | Х | | X | | X | |
| Y | Maumee loamy fine sand | 77.0 | Х | | X | | X | |
| c_2 | Maumee laomy fine sand | 40.0 | X | | X | | | X |
| D_2^2 | Plainfield fine sand | 50.0 | | X | | X | | X |
| F ₂ | Maumee loamy fine sand | 60.0 | X | | | X | | X |
| H_2^L | Plainfield fine sand | 40.0 | | X | | X | | X |
| N ₂ | Maumee loamy fine sand | 100.0 | X | | X | | X | |
| 02 | Maumee loamy fine sand | 100.0 | х | | X | | X | |
| Q_2^2 | Maumee laomy fine sand | 60.0 | X | | X | | X | |

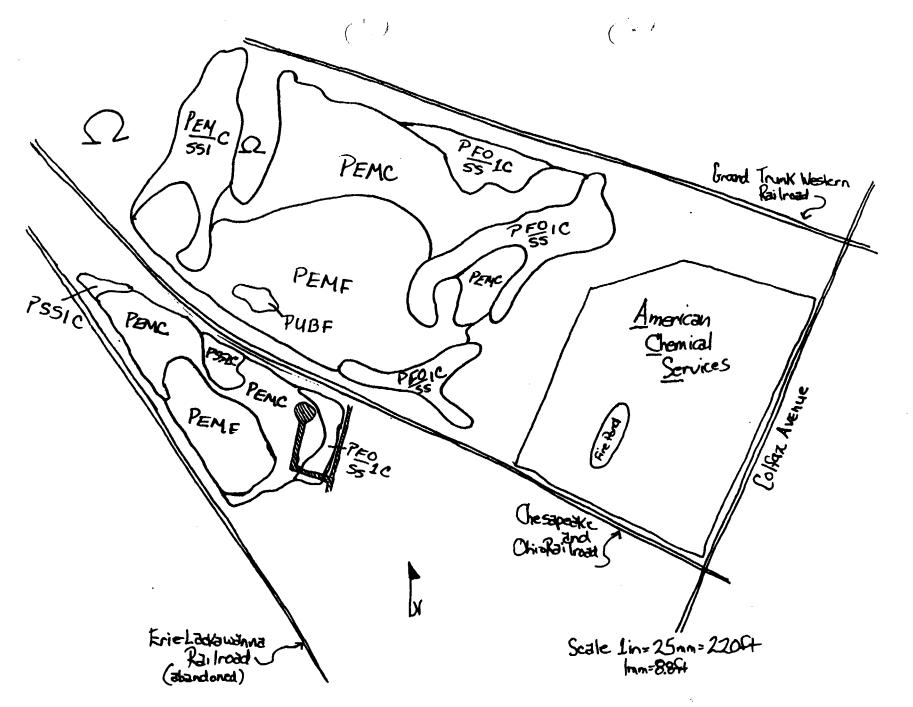


FIGURE 5. Wetland designations at the ACS site, Griffith, Indiana. Cross-hatched area is location of the illegal service road/turn-around fill.

The vegetation of "marshes" is characterized by emergent aquatic plants growing in permanent to semi-permanent shallow water. Also present are species of shallow open water communities, as well as those found in sedge meadows and seasonally flooded basins. Marshes are among the most productive of all wetlands for waterbirds and furbearers, and can also provide spawning and nursery habitat for many species of fish. Birds that use marshes for breeding and feeding include ducks, geese, rails, herons, egrets, terns, and many songbirds. Raptors such as the osprey, bald eagle, and northern harrier frequent marshes in search of prey. Important furbearers inhabiting marshes include beaver, muskrat, and mink. Excellent winter habitat can be provided for upland wildlife, including ring-necked pheasant and eastern cottontail (Eggers and Reed 1987).

The emergent wetlands in the centers of wetland areas I and II are predominated by cattails. A list of species collected can be found in Table 3. Cattail stands provide important food and cover for wildlife. For example, the rhizomes are eaten by geese and muskrats. Muskrats also use the foliage to construct their lodges, which in turn can provide resting and nesting sites for waterbirds. Yellow-headed blackbirds, red-winged blackbirds, and marsh wrens build their nests in cattail vegetation. Wetland area I contains an open water area with a muskrat den and much activity in this area was apparent.

The transitional zones between the emergent areas and shrubby or forest areas support hydrophytic vegetation on saturated but not inundated soils. Plants occurring in these areas include species found in other communities, such as the annuals of seasonally flooded basins, emergent aquatics of marshes, and invading shrubs or trees, which are present as scattered, small individuals.

The transitional emergent zones are particularly important for their water quality functions. Wildlife habitat is provided for many species including sandhill crane, ring-necked pheasant, common snipe, sedge wren, small mammals, and white-tailed deer. The composites found in these areas are an important fall and winter food source for songbirds.

Scrub-shrub wetlands are plant communities dominated by woody vegetation less than 20 feet in height and with dbh's of less than 6 inches growing on saturated to seasonally flooded soils. They can be dominated by willows and/or red-osier, and sometimes silky (swamp) dogwood. These areas usually retain some of the forbs, grasses, and sedges of the transitional emergent zones. The vegetation in scrub-shrub wetlands possesses a variety of wildlife value. Willows are browsed by white-tail deer and eastern cottontails; red-osier dogwoods provide berries for song birds and ruffed grouse and are browsed by deer and rabbits; and elderberry also provides berries for songbirds and ruffed grouse.

Forested wetlands are dominated by mature conifers or lowland hardwood trees. They are important for stormwater and flood retention, and also provide habitat for white-tailed deer, furbearers, songbirds, ruffed grouse, barred owl, and amphibians. The various wetland habitats at the American Chemical Services site are being used by a variety of wildlife species, many of which were observed during the reconnaissance flagging visit, and the field survey visit (Table 4).

ADDITIONAL WETLANDS

At a meeting held by the U.S. EPA project manager on February 28, 1990, FWS was requested to observe the area immediately east of American Chemical Services,

Table 3. List of Vegetation Species collected on April 10-11, 1990 at the ACS site, Griffith, Indiana.

| Scientific Name | Common Name | Indicator Category |
|----------------------------|---------------------|--------------------|
| Agrimonia parviflora | Agrimony | FAC+ |
| A. pubescens | Agrimony | · None |
| Ampelopsis arborea | Peppervine | None |
| Apocyneum androsaemifolium | Spreading dogbane | None |
| Aronia arbutifolia | Red chokeberry | None |
| Betula allegheniensis | Yellow birch | FAC |
| tha palustris | Marsh marigold | OBL |
| <u>Itis occidentalis</u> | Hackberry | FAC- |
| ornus ammonum | Swamp dogwood | FACW+ |
| C. stolonifera | Red-osier dogwood | FACW |
| Corylus americana | Hazelnut | FACU |
| Cytisus scoparius | Scotch broom | None |
| Dipsacus sylvestris | Teasel | None |
| Fragaria virginiana | Common Strawberry | FAC |
| Galium aparine | Bedstraw | FACU |
| Hamamelis virgiana | Witch hazel | FACU |
| Liquidambar styraciflua | Sweet Gum | FACW |
| Ludwigia glandulosa | Ludwigia | OBL |
| Lyriodendron tulipifera | Tuliptree | FACU+ |
| Nyssa sylvatica | Tupelo | FACW+ |
| Onoclea sensibilis | Sensitive fern | FACW |
| Populus deltoides | Cottonwood | FAC+ |
| P. grandidentata | Large-tooth Poplar | FACU |
| tremoides | Quaking Aspen | FAC |
| unus pennsylcanica | Pin cherry | FACU |
| Yteris esculenta | Braken fern | FACU |
| Quercus alba | White oak | FACU |
| Q. bicolor | Swamp white oak | FACW+ |
| O. coccinea | Scarlet oak | None |
| Q. palustris | Pin oak | FACW |
| Q. rubra | Northern red oak | FACU |
| O. velutina | Black oak | None |
| Rhus copellina | Dwarf sumac | None |
| Riccia fluitans | Liverwort | None |
| Ricciocarpus natans | Liverwort | None |
| Rosa carolina | Wild rose | FACU- |
| R. multiflora | Multi-flora rose | FACU |
| R. nitida | Northeastern rose | None |
| Rubus allegheniensis | Highbush blackberry | FACU+ |
| R. canadensis | Smooth backberry | None |
| R. hispidus | Swamp dewberry | FACW |
| R. villosa | Low blackberry | None |
| Salix discolor | Pussy willow | FACW |
| | Sandbar willow | OBL |
| S. exigua | Salidnar Millom | ODD |

Table 3. List of Vegetation Species (Con't).

| Scientific Name | Common Name | Indicator Category |
|----------------------------|---------------------|--------------------|
| Sambucus canadensis | Elderberry | FACW- |
| <u>Solidago altissima</u> | Golden rod | FACU |
| Sonchus arvensis | Field sow-thistle | FAC- |
| Spiraea alba | Meadow sweet | FACW+ |
| S. latifolia | Meadow sweet | None |
| Stenanthium gramineum | Featherbells | FAC |
| Thelypteris thelypteroides | Marsh fern | FACW |
| Typha angustifolia | Narrow-leaf cattail | OBL |
| latifolia | Broad-leaf cattail | OBL |
| _mus rubra | Slippery elm | FAC |
| Verbascum thaspus | Wooly mullein | None 🔾 |
| Verbena urticifolia | White vervain | FAC+ |
| Viburnum prunifolium | Black haw | FACU |
| Vitis aestivalis | Summer grape | FACU |
| V. vulpina | Frost grape | FACW- |
| Xanthorhiza simplissima | Yellowroot | None |

Table 4. List of wildlife species observed utilizing the wetland habitats at the American Chemical Services site, Griffith, Indiana April 10-11, 1990.

| Scientific Name | Common Name | |
|------------------------|-------------------------------|--|
| BIR | RDS | |
| Agelaius phoeniceus | Red-winged blackbirds (many) | |
| Aix sponsa | Wood ducks (1 pair) | |
| Anas platyrhynchos | Mallard ducks (2 pairs) | |
| Branta canadensis | Canada geese (1 pair) | |
| Charadrius vociferus | Killdeer (1) | |
| Corvus brachyrhynchos | Common crows (many) | |
| Dendrocopos pubescens | Downy woodpeckers (2) | |
| <u>D. villosa</u> | Hairy woodpeckers (1) | |
| <u>Larus spp.</u> | Gulls (many) | |
| Phasianus colchicus | Ring-necked pheasant (1 male) | |
| Regulus satrapa | Golden-crown kinglets (2) | |
| Richmondena cardinalis | Cardinals (3) | |
| <u>Spinus tristis</u> | American goldfinches (1 pair) | |
| MAMM | IALS | |
| Procyon lotor | Raccoon (tracks) | |
| Odocoileus virginianus | White-tailed deer (tracks) | |
| Ondatra zibethicus | Muskrats (3) & den | |
| Sylvilagus floridanus | Eastern cottontails (4) | |

adjacent to Colfax Road to determine if wetlands were present. This area was walked during the field reconnaissance flagging visit, which revealed various wetlands, some of which were not indicated on the NWI maps (Figure 6). There is a palustrine, emergent, semi-permanent wetland approximately 7 acres in size about 0.1 mile east of Colfax Road, that is identified on the NWI map. The field check revealed that this wetland extends west and southward within 20-30 feet of the roadway. These wetlands would be classified as a combination palustrine, emergent/scrub-shrub forested area with water regimes ranging between temporary, saturated, seasonal, seasonal saturated, and semi-permanent.

A wetland delineation was not conducted for this area, however, the soil survey maps indicate that portions do contain hydric soils.

ENDANGERED SPECIES

The Highland area of Lake County is represented by many federal and state species of special emphasis/concern, in addition to several federal threatened and endangered species. An annotated list follows:

Fed E Fed E Fed T Sp EM/CN Indiana bat
Peregrine falcon
Pitchers thistle
Great blue heron
American bittern
Black tern
Least bittern
King rail

Yellow-crowned night heron Spotted turtle Western smooth green snake

Franklin's ground squirrel Blanding's turtle

Bald eagle

Myotis sodalis

(Falco peregrinus) *Migratory

(<u>Cirsium pitcheri</u>) (<u>Ardea herodias</u>)

(Botaurus lentiginosus)

(<u>Chlidonis niger</u>) (<u>Ixobrychus exilis</u>) (<u>Ralus elegans</u>)

(Nycticorax violaceous)

(Clemmys guttata)
(Opheodrys vernalis)
(Spermophilus franklini)
(Emydoidea blandingi)

(<u>Haliaeetus leucocephalus</u>) *Historical

This endangered species list constitutes informal consultation only, and is not intended to fulfill the requirement of Section 7 of the Endangered Species Act of 1973, as amended. If, after review of the Phase I Remedial Investigation report, it appears likely that any endangered species may have been/may be affected by this site, it may be necessary to initiate formal consultation. If as a result of further consultation, a "no effect" determination is made regarding endangered species, that determination should be revisited after 1 year for new information, or newly listed species.

CONCLUSIONS

- 1. Wetlands identified on the NWI do exist at the American Chemical Services site.
- There are wetlands present at the site that are not identified on the NWI.
 These wetlands consist of palustrine, forested, and scrub-shrub transitional zones between the NWI-identified emergent wetland and upland areas.

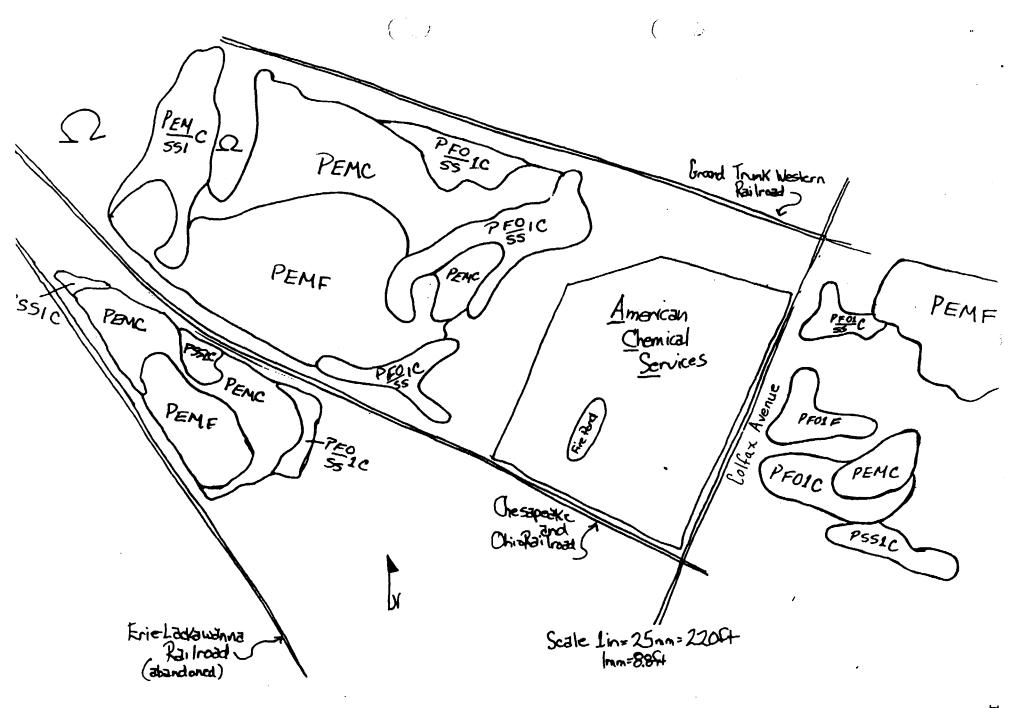


FIGURE 6. Approximate locations and classifications of additional wetlands located near the ACS site, east across. Colfax Avenue, Griffith, Indiana.

- 3. The wetlands present at the site provide habitat diversity for a variety of wildlife species.
- 4. The wetlands present on the site possess potential habitat for federal threatened and endangered species, state and federal species of special concern/emphasis, and other birds protected by the Migratory Bird Treaty Act.

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APPENDIX 1

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APPENDIX 2
Field Data Forms